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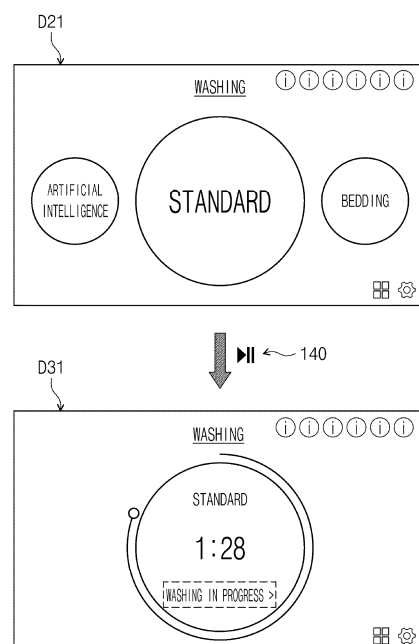
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(54) **LAUNDRY TREATMENT APPARATUS**

(57) Disclosed is a laundry treating apparatus including a first treating apparatus including a first drum configured to receive laundry, a second treating apparatus including a second drum configured to receive laundry, an output unit configured to output a screen, an input unit configured to receive a user command for selecting a target to be displayed on the screen, and a start-stop button provided in only one of the first treating apparatus and the second treating apparatus, the start-stop button being manipulated by a user, wherein the plurality of treating apparatuses is performed or stopped by the start-stop button.

FIG. 14



EP 4 741 559 A1

Description

BACKGROUND

Field

[0001] The present disclosure relates to a laundry treating apparatus, and more particularly to a laundry treating apparatus including an output unit configured to output a screen.

Discussion of the Related Art

[0002] A laundry treating apparatus is an apparatus that performs a laundry treating process, such as loading clothing, bedding, etc. (hereinafter referred to as laundry) into a drum and removing contaminants from the laundry.

[0003] The laundry treating apparatus may perform processes such as washing, rinsing, spin-drying, and drying of laundry, and the laundry treating apparatus may be categorized into a top-loading type laundry treating apparatus and a front-loading type laundry treating apparatus based on a method of loading laundry into the drum.

[0004] The laundry treating apparatus may include a cabinet defining the appearance thereof, a tub received in the cabinet, a drum which is rotatably mounted in the tub and into which laundry is loaded, and a detergent supply device configured to supply detergent into the drum.

[0005] When the laundry treating apparatus is configured to wash laundry, the drum may be rotated by a motor in the state in which water and detergent are supplied to the laundry received in the drum, and the laundry may be removed by friction between the drum and washing water.

[0006] The detergent supply device has a detergent supply function to improve the washing effect. Here, the detergent means a material that improves the washing effect, such as fabric detergent, fabric softener, and fabric bleach. The detergent may be powdered detergent or liquid detergent.

[0007] When the laundry treating apparatus is configured to dry laundry, on the other hand, the laundry treating apparatus may provide dry air to the laundry to remove moisture from the laundry.

[0008] The laundry treating apparatus may include a cabinet, a drum rotatably provided in the cabinet, and a heating means configured to heat or dry air provided to the laundry.

[0009] As dry air is provided to the laundry received in the drum, moisture present in the laundry may be evaporated and removed by the dry air, whereby the laundry may be dried.

[0010] Meanwhile, when the amount of laundry is large or when different processes, such as washing and drying of the laundry, are to be performed together, a plurality of laundry treating apparatuses may be used.

[0011] Related document KR 10-2008-0021921 A1 discloses a laundry treating apparatus including a plurality of treating apparatuses. The apparatus disclosed in the related document includes a first treating apparatus and a second treating apparatus.

[0012] Each of the first treating apparatus and the second treating apparatus of the related document includes a drum provided in a cabinet to perform a laundry treating process. Meanwhile, each of the first treating apparatus and the second treating apparatus is provided with a control panel.

[0013] The control panel may be provided with an output unit configured to output a screen. Accordingly, the first treating apparatus and the second treating apparatus of the related document may provide different kinds of information through the respective output units.

[0014] However, when the first treating apparatus and the second treating apparatus perform independent treating processes, outputting information through the output unit of each of the first treating apparatus and the second treating apparatus may be inconvenient because a user must check the plurality of output units and provision of a separate output unit for each treating apparatus may increase the manufacturing process time and complicate the design of the control panel.

[0015] In addition, when information of different treating apparatuses is to be provided through one output unit, if a button configured to change the treating apparatus from which information is output is provided on one screen, the design and structure of the control panel, etc. may be complicated, ease of use of the button separated from the screen may be reduced, and it may be difficult for the user to identify how to use the button, etc.

[0016] For example, if there is a plurality of buttons, each of which performs a single command, it may be difficult to identify which button is used for which apparatus, and manufacture may be more expensive and time-consuming than if there is a single button.

[0017] In addition, when courses of the first treating apparatus and the second treating apparatus are performed simultaneously, if a single button is used to operate both apparatuses, the apparatuses are simultaneously operated or stopped, and therefore it is not possible to operate or stop only one apparatus.

[0018] Furthermore, when the first treating apparatus and/or the second treating apparatus is operated in any one of a plurality of modes, such as a washing mode for washing and a drying mode for drying, the user may not be able to easily check the selection of the mode and the selection of the apparatus and may be confused about the selection.

[0019] Therefore, it is important in the art to which the present disclosure pertains to enable convenient selection and operation of a plurality of treating apparatuses using a single start-stop button and a single output unit, to enable effective selection of a plurality of modes that can be performed by a single treating apparatus in order to

perform an efficient laundry treating process, and to enable selection and operation of only one apparatus when cycles are simultaneously performed.

SUMMARY

[0020] The present disclosure is to address at least the above-mentioned problems and/or disadvantages and to provide at least the advantages described below. Accordingly, an aspect of the present disclosure is to provide a laundry treating apparatus capable of effectively outputting information of a plurality of treating apparatuses through a single output unit.

[0021] Another aspect of the present disclosure is to provide a laundry treating apparatus capable of effectively operating a plurality of treating apparatuses using a single button.

[0022] A further aspect of the present disclosure is to provide a laundry treating apparatus capable of operating or stopping a plurality of treating apparatuses using a single start-stop button.

[0023] In a laundry treating apparatus according to an embodiment of the present disclosure, a first treating apparatus and a second treating apparatus may be operated by a single start-stop button.

[0024] An output unit may output a first course selection screen capable of selecting a plurality of courses for treating laundry of the first treating apparatus and a second course selection screen capable of selecting a plurality of courses for treating laundry of the second treating apparatus, each course selection screen may be output to the output unit, and the course of each treating apparatus may be performed or stopped by manipulation of the start-stop button.

[0025] The laundry treating apparatus according to the embodiment of the present disclosure includes a first treating apparatus, a second treating apparatus, an output unit, an input unit, and a start-stop button.

[0026] The first treating apparatus includes a first receiving unit configured to receive laundry. The second treating apparatus includes a second receiving unit configured to receive laundry. The output unit may be provided in the first treating apparatus or the second treating apparatus, and may output a screen.

[0027] The input unit may be provided in the first treating apparatus or the second treating apparatus, and may receive a user command for selecting a target to be displayed on the screen. The start-stop button may be provided in only one of the first treating apparatus and the second treating apparatus as a single button, and may be manipulated by a user. The screen output from the output unit may include a course selection screen on which a plurality of courses for treating the laundry is displayed. The screen may include a first course selection screen on which a first course to be performed by the first treating apparatus, among a plurality of courses for treating the laundry, is displayed for selection by the input unit and a second course selection screen on which a second

course to be performed by the second treating apparatus, among the plurality of courses, is displayed for selection by the input unit.

[0028] When the start-stop button is manipulated in the state in which the first course selection screen is output to the output unit, the first course of the first treating apparatus may be performed, and when the start-stop button is manipulated in the state in which the second course selection screen is output to the output unit, the second course of the second treating apparatus may be performed.

[0029] The first course selection screen may include a mode selection object configured to display the second treating apparatus as selectable, and the output unit may be selected by the second treating apparatus displayed through the mode selection object and may output the second course selection screen.

[0030] When the mode selection object is selected, a plurality of operation modes for performing different courses among the plurality of courses may be displayed.

[0031] Some of the plurality of operation modes may correspond to operation modes of the first treating apparatus, and the others may correspond to operation modes of the second treating apparatus.

[0032] The course selection screen may display different courses in different operation modes.

[0033] The output unit may output a first course progress screen configured to display progress information of the first course during a progress of the first course.

[0034] When the start-stop button is manipulated on the first course progress screen, the first course may be paused or resumed.

[0035] The first course progress screen may include a mode selection object configured to display the second treating apparatus as selectable.

[0036] When the second treating apparatus displayed through the mode selection object is selected in the state in which the first course is being performed and the second course is before being performed, the output unit may output the second course selection screen.

[0037] The first course may be provided in plural, and when one of the plurality of first courses is paused while being performed, the output unit may output the first course selection screen on which the plurality of first courses is displayed.

[0038] If another of the plurality of first courses is selected on the first course selection screen instead of the one of the plurality of first courses, performance of the first course may be canceled.

[0039] The output unit may output a simultaneous screen configured to display both progress information of the first course and progress information of the second course.

[0040] The simultaneous screen may include a first course object configured to display the progress information of the first course and a second course object configured to display the progress information of the second course.

[0041] When the start-stop button is manipulated on the simultaneous screen, the progress of the first course and the progress of the second course may be maintained.

[0042] When the start-stop button is manipulated on the simultaneous screen, the output unit may output a message to select the first course or the second course.

[0043] When one of the first course object and the second course object is selected and the start-stop button is manipulated on the simultaneous screen, a course according to the one of the first course object and the second course object may be paused or resumed.

[0044] The screen may further include a first option display screen configured to display option information of the first course and a second option display screen configured to display option information of the second course.

[0045] The output unit may output the first option display screen for the first course when a first course object corresponding to the first course is selected on the first course selection screen, and may output the second option display screen for the second course when a second course object corresponding to the second course is selected on the second course selection screen.

[0046] When the start-stop button is manipulated on the first option display screen, the first course displayed on the first option display screen may be performed or stopped.

[0047] When the start-stop button is manipulated on the second option display screen, the second course displayed on the second option display screen may be performed or stopped.

[0048] In the state in which a first option display screen configured to display an option of the first course is output from the simultaneous screen, the first course may be paused or resumed when the start-stop button is manipulated on the first option display screen.

[0049] The first option display screen may be displayed such that that the first option selection object is not selectable during a progress of the first course and such that the first option selection object is selectable in the state in which the first course is paused.

[0050] The output unit may output a first schedule setting screen on which a plurality of first time setting objects representing different completion times for the first course is displayed for selection.

[0051] When the start-stop button is manipulated in a state in which one of the plurality of first time setting objects is selected on the first schedule setting screen, scheduling of the first course may be completed.

[0052] The input unit may be provided in the output unit, and may detect a touch signal of a user on the screen.

[0053] The start-stop button may be spaced apart from the input unit.

[0054] When the start-stop button is manipulated on the simultaneous screen, the progress of the first course

and the progress of the second course may be maintained, and the output unit may output a message to select the first course or the second course.

5 BRIEF DESCRIPTION OF THE DRAWINGS

[0055] The accompanying drawings, which are included to provide a further understanding of the disclosure and are incorporated in and constitute a part of this application, show embodiment(s) of the disclosure and together with the description serve to explain the principle of the disclosure. In the drawings:

FIG. 1 is a perspective view showing a first treating apparatus of a laundry treating apparatus according to an embodiment of the present disclosure;

FIG. 2 is a sectional view showing the interior of the first treating apparatus of the laundry treating apparatus according to the embodiment of the present disclosure;

FIG. 3 is a view schematically showing the communication relationship of the laundry treating apparatus according to the embodiment of the present disclosure;

FIG. 4 is a perspective view showing the first treating apparatus and a second treating apparatus of the laundry treating apparatus according to the embodiment of the present disclosure;

FIG. 5 is a front view showing the first treating apparatus and the second treating apparatus of the laundry treating apparatus according to the embodiment of the present disclosure;

FIG. 6 is a perspective view showing the second treating apparatus of the laundry treating apparatus according to the embodiment of the present disclosure;

FIG. 7 is a sectional view showing the interior of the second treating apparatus of the laundry treating apparatus according to the embodiment of the present disclosure;

FIG. 8 is a view conceptually showing the control relationship of the laundry treating apparatus according to the embodiment of the present disclosure;

FIG. 9 is a view showing a control panel of the laundry treating apparatus according to the embodiment of the present disclosure;

FIG. 10 is a conceptual view showing an operation process of the laundry treating apparatus according to the embodiment of the present disclosure;

FIG. 11 is a view showing a start screen, which is one of screens output from an output unit, in the embodiment of the present disclosure;

FIG. 12 is a view showing a course selection screen, which is one of the screens output from the output unit, in the embodiment of the present disclosure;

FIG. 13 is a view showing a course progress screen, which is one of the screens output from the output unit, in the embodiment of the present disclosure;

FIG. 14 is a view showing that a first course selection screen, which is one of the screens output from the output unit, is switched to a first course progress screen when a stop-stop button is manipulated on the first course selection screen, in the embodiment of the present disclosure;

FIG. 15 is a view showing that a second course selection screen, which is one of the screens output from the output unit, is switched to a second course progress screen when a stop-stop button is manipulated on the first course selection screen, in the embodiment of the present disclosure;

FIG. 16 is a view showing a mode changing process of the first treating apparatus in the laundry treating apparatus according to the embodiment of the present disclosure;

FIG. 17 is a view showing a mode changing process from the first treating apparatus to the second treating apparatus in the laundry treating apparatus according to the embodiment of the present disclosure;

FIG. 18 is a view showing a pausing process of the first treating apparatus in the laundry treating apparatus according to the embodiment of the present disclosure;

FIG. 19 is a view showing a process of performing a second mode course while a course of the first treating apparatus is performed in the laundry treating apparatus according to the embodiment of the present disclosure;

FIG. 20 is a view showing a cancelation process of the course of the first treating apparatus that is being performed in the laundry treating apparatus according to the embodiment of the present disclosure;

FIG. 21 is a view showing a simultaneous screen, which is one of the screens output from the output unit, in an embodiment of the present disclosure;

FIG. 22 is a view showing the case in which a start-stop button is manipulated on the simultaneous screen of the laundry treating apparatus according to the embodiment of the present disclosure;

FIG. 23 is a view showing a message output from the output unit when the start-stop button is manipulated on the simultaneous screen of the laundry treating apparatus according to the embodiment of the present disclosure;

FIG. 24 is a view showing a process of outputting an option display screen on the simultaneous screen from the output unit of the laundry treating apparatus according to the embodiment of the present disclosure;

FIG. 25 is a view showing a process of activating an option selection object on the option display screen in the laundry treating apparatus according to the embodiment of the present disclosure;

FIG. 26 is a view showing a process of deactivating the option selection object on the option display screen in the laundry treating apparatus according to the embodiment of the present disclosure; and

FIG. 27 is a view showing a process of scheduling a completion time in the laundry treating apparatus according to the embodiment of the present disclosure.

DETAILED DESCRIPTION

[0056] Now, embodiments of the present disclosure will be described in detail with reference to the accompanying drawings such that the embodiments of the present disclosure can be easily implemented by a person having ordinary skill in the art to which the present disclosure pertains.

[0057] However, the present disclosure may be implemented in many different forms and is not limited to the embodiments described herein. In order to clearly illustrate the present disclosure in the drawings, parts not pertinent to the description have been omitted, and similar parts throughout the specification have been designated by similar reference numerals.

[0058] In this specification, duplicate descriptions of the same components will be omitted.

[0059] It will be understood that, when a component is referred to as being "connected to" or "coupled to" another component in this specification, the component may be directly connected to or coupled to the other component, or intervening components may be present. In contrast, when a component is referred to as being "directly connected to" or "directly coupled to" another component, there are no intervening components present.

[0060] In addition, the terms used in this specification are provided only to explain specific embodiments, but are not intended to restrict the present disclosure.

[0061] Also, in this specification, a singular representation may include a plural representation unless it represents a definitely different meaning from the context.

[0062] It will be further understood that the terms "comprises", "has" and the like, when used in this specification, specify the presence of stated features, numbers, steps, operations, components, parts, or combinations thereof, but do not preclude the presence or addition of one or more other features, numbers, steps, operations, components, parts, or combinations thereof.

[0063] In addition, as used herein, the term "and/or" includes any combination of a plurality of listed items or any one of the plurality of listed items. As used herein, "A or B" may include A, B, or both A and B.

[0064] FIG. 1 shows a laundry treating apparatus 1 according to an embodiment of the present disclosure. In the present disclosure, the laundry treating apparatus 1 may be a single treating apparatus, or may include a plurality of treating apparatuses, including a first treating apparatus 10 and a second treating apparatus 20.

[0065] The laundry treating apparatus 1 may perform a treating course for treating laundry. When the laundry treating apparatus 1 includes a plurality of treating apparatuses, each of the plurality of treating apparatuses may

perform the treating course.

[0066] The treating course treats the laundry in various ways, such as washing the laundry, drying the laundry, and removing wrinkles from the laundry. The laundry loaded into the laundry treating apparatus may be treated through the treating course and provided to a user.

[0067] A plurality of different treating courses may be preset and provided for selection by the user. For example, the plurality of treating courses may include at least one of a washing course for washing the laundry, a drying course for drying the laundry, and a washing-drying course in which washing and drying of the laundry are performed successively.

[0068] The laundry treating apparatus 1 according to the embodiment of the present disclosure may include a controller 70, and the plurality of treating courses may be prestored in the controller 70 and provided to the user.

[0069] The treating course may include at least one cycle. The treating course may be defined as including at least one of a water supply cycle, a detergent supply cycle, a washing cycle, a rinsing cycle a draining cycle, a spin-drying cycle, and a drying cycle.

[0070] The water supply cycle may be a cycle in which water is supplied to a tub into which the laundry is loaded, the detergent supply cycle may be a cycle in which detergent is supplied to the tub, the washing cycle may be a cycle in which a drum is rotated to wash the laundry in the state in which the detergent is present in the tub, the rinsing cycle may be a cycle in which the drum is rotated to rinse the laundry in the state in which water is supplied to the tub and no detergent is present in the tub, the draining cycle may be a cycle in which the water in the tub is drained out of the tub, the spin-drying cycle may be a cycle in which the drum is rotated to separate water present in the laundry from the laundry in the state in which no water is supplied to the tub, and the drying cycle may be a cycle in which hot dry air is supplied into the drum or the tub to remove moisture from the laundry.

[0071] The plurality of treating courses may be preset to differ from each other in at least one cycle and stored in the controller 70. The user may select any one of the plurality of treating courses to treat the laundry, as needed.

[0072] Meanwhile, FIG. 1 shows a first treating apparatus 10 according to an embodiment of the present disclosure. That is, the laundry treating apparatus 1 shown in FIG. 1 is configured to include only a single treating apparatus, i.e., a first treating apparatus 10, as an example of the present disclosure.

[0073] The first treating apparatus 10 includes a first cabinet 11. The first cabinet 11 has a space defined therein and may form the appearance of the first treating apparatus 10.

[0074] The first cabinet 11 may include a front panel, a rear panel, a side panel, and a top panel. The plurality of panels may be coupled to form the first cabinet 11. A first laundry inlet 18 through which the exterior and interior of the cabinet communicate with each other may be formed

in one surface of the first cabinet 11.

[0075] FIG. 1 shows a laundry treating apparatus 1 according to an embodiment of the present disclosure. In the present disclosure, the laundry treating apparatus 1 may be a single treating apparatus, or may include a plurality of treating apparatuses, including a first treating apparatus 10 and a second treating apparatus 20.

[0076] The laundry treating apparatus 1 may perform a treating course C0 for treating laundry. When the laundry treating apparatus 1 includes a plurality of treating apparatuses, each of the plurality of treating apparatuses may perform the treating course C0.

[0077] The treating course C0 treats the laundry in various ways, such as washing the laundry, drying the laundry, and removing wrinkles from the laundry. The laundry loaded into the treating apparatus may be treated through the treating course C0 and provided to the user.

[0078] A plurality of different treating courses C0 may be preset and provided for selection by the user. For example, the plurality of treating courses C0 may include at least one of a washing course C11 for washing the laundry, a drying course C12 for drying the laundry, and a washing-drying course C13 in which washing and drying of the laundry are performed successively.

[0079] The laundry treating apparatus 1 according to the embodiment of the present disclosure may include a controller 70, and the plurality of treating courses C0 may be prestored in the controller 70 and provided to the user.

[0080] The treating course C0 may include at least one cycle. The treating course C0 may be defined as including at least one of a water supply cycle, a detergent supply cycle, a washing cycle, a rinsing cycle a draining cycle, a spin-drying cycle, and a drying cycle.

[0081] The water supply cycle may be a cycle in which water is supplied to a tub into which the laundry is loaded, the detergent supply cycle may be a cycle in which detergent is supplied to the tub, the washing cycle may be a cycle in which a drum is rotated to wash the laundry in the state in which the detergent is present in the tub, the rinsing cycle may be a cycle in which the drum is rotated to rinse the laundry in the state in which water is supplied to the tub and no detergent is present in the tub, the draining cycle may be a cycle in which the water in the tub is drained out of the tub, the spin-drying cycle may be a cycle in which the drum is rotated to separate water present in the laundry from the laundry in the state in which no water is supplied to the tub, and the drying cycle may be a cycle in which hot dry air is supplied into the drum or the tub to remove moisture from the laundry.

[0082] The plurality of treating courses C0 may be preset to differ from each other in at least one cycle and stored in the controller 70. The user may select any one of the plurality of treating courses C0 to treat the laundry, as needed.

[0083] Meanwhile, FIG. 1 shows a first treating apparatus 10 according to an embodiment of the present disclosure. That is, the laundry treating apparatus 1 shown in FIG. 1 is configured to include only a single

treating apparatus, i.e., a first treating apparatus 10, as an example of the present disclosure.

[0084] The first treating apparatus 10 includes a first cabinet 11. The first cabinet 11 has a space defined therein and may form the appearance of the first treating apparatus 10.

[0085] The first cabinet 11 may include a front panel, a rear panel, a side panel, and a top panel. The plurality of panels may be coupled to form the first cabinet 11. A first laundry inlet 18 through which the exterior and interior of the cabinet communicate with each other may be formed in one surface of the first cabinet 11.

[0086] FIG. 1 shows that the first laundry inlet 18 is formed in the front panel in accordance with an embodiment of the present disclosure, but the position of the first laundry inlet 18 is not necessarily limited to the front panel.

[0087] A first door 19 may be coupled to the first cabinet 11 and configured to selectively close the first laundry inlet 18. For example, the first door 19 may be rotatably coupled to the front panel and provide to close the first laundry inlet 18 depending on the rotational position thereof.

[0088] The laundry treating apparatus according to the embodiment of the present disclosure may include a control panel 100. The control panel 100 may include an input unit 120 and an output unit. However, the input unit 120 and the output unit are not necessarily provided at the control panel 100.

[0089] The user may check course setting information or course progress information from information output through the output unit, and may issue various commands to the controller 70, such as changing the course setting by manipulating the input unit 120 to generate an input signal. A detailed description of the control panel 100 and the controller 70 will be given later.

[0090] Meanwhile, the interior of the first treating apparatus 10 is shown FIG. 2. Although FIG. 2 shows the first treating apparatus 10 in the form of a washer-dryer capable of washing and drying laundry, this is for illustrative purposes only and does not necessarily limit the first treating apparatus 10 to a washer-dryer.

[0091] The interior of the first treating apparatus 10, defined by the first cabinet 11, may include a first tub 12 and a first receiving unit configured to receive laundry. The first tub 12 may be provided in the first treating apparatus 10 to receive water.

[0092] The first tub 12 may include a first tub opening facing the first laundry inlet 18. Accordingly, laundry loaded by the user through the first laundry inlet 18 after opening the first door 19 may pass through the first laundry inlet 18 and the first tub opening and be received in the first tub 12.

[0093] The first receiving unit may be provided in the first cabinet 11 to receive the laundry. The first receiving unit may be configured in various forms. For example, the first receiving unit may be in the form of a basket provided in the first door 19 or a first drum 13 provided in the first tub

12, and may be provided in plural.

[0094] That is, in the embodiment of the present disclosure, the first receiving unit may include a first drum 13. The first drum 13 may be rotatably provided in the first tub 12. The laundry treating apparatus according to the embodiment of the present disclosure may further include a first driving unit 14, wherein the first drum 13 may be connected to the first driving unit 14 to receive rotational force therefrom.

[0095] The first drum 13 may receive laundry. The first drum 13 may include a first drum 13 opening facing the first tub opening. Accordingly, laundry loaded by the user through the first laundry inlet 18 may be received in the first drum 13 via the first tub opening and the first drum 13 opening.

[0096] The laundry treating apparatus according to the embodiment of the present disclosure may include a first water supply unit. The first water supply unit 15 may receive water from the outside, such as by being connected to an external water source. The first water supply unit 15 may include a water supply hose, which is the flow path of water and a water supply valve configured to regulate the flow of water.

[0097] The laundry treating apparatus according to the embodiment of the present disclosure may include a first rinse supply unit 16. The first detergent supply unit 16 may store detergent and may be configured to supply detergent into the first tub 12 when detergent is required to perform the treating process C0 for treating the laundry.

[0098] FIG. 2 shows a structure in which the first water supply unit 15 and the first detergent supply unit 16 are connected to each other and water flowing along the first water supply unit 15 is supplied into the first tub 12 with detergent via the first detergent supply unit 16, but the present disclosure is not necessarily limited thereto, and the first water supply unit 15 may be directly connected to the interior of the first tub 12.

[0099] The laundry treating apparatus according to the embodiment of the present disclosure may include a first drainage unit 17. The first drainage unit 17 may be connected to the first tub 12 and configured to discharge water present in the first tub 12 to the outside of the first cabinet 11. The first drainage unit 17 may include a drainage hose through which water flows and a drainage pump configured to generate flow force of the water.

[0100] In the embodiment of the present disclosure, water and detergent may be supplied into the first tub 12 via the first water supply unit 15 and the first detergent supply unit 16 when the washing course C11 for washing the laundry is performed, and washing of the laundry may be performed by rotation of the first drum 13 by the first driving unit 14, and the water and detergent in the first tub 12 may be discharged to the outside of the first cabinet 11 via the first drainage unit 17 as needed.

[0101] Meanwhile, in the embodiment of the present disclosure, the first treating apparatus 10 may include a heating unit 30. The heating unit 30 may be configured to

receive air from the first drum 13, dehumidify and heat the air, and supply the same back into the first drum 13, to heat air outside the first cabinet 11 and supply the same into the first drum 13, or to heat air present in the first drum 13.

[0102] The first treating apparatus 10 according to the embodiment of the present disclosure does not necessarily need to include the first tub 12, and the first tub 12 may be omitted as needed. That is, the embodiment of the present disclosure is not necessarily limited to a washing machine, but may be a dryer with the tub removed or a washer-dryer capable of performing washing and drying.

[0103] Meanwhile, when the laundry treating apparatus according to the embodiment of the present disclosure includes only the first treating apparatus 10, i.e., only one treating apparatus, the first treating apparatus 10 may be understood as the laundry treating apparatus 1.

[0104] That is, the first cabinet 11, the first tub 12, the first drum 13, etc. of the first treating apparatus 10 may all be referred to as a cabinet, a tub, a drum, etc. representative of the laundry treating apparatus 1 of the present disclosure.

[0105] Meanwhile, FIG. 3 conceptually shows an information exchange method of the laundry treating apparatus 1 according to the embodiment of the present disclosure.

[0106] In the embodiment of the present disclosure, the first treating apparatus 10 may be configured to communicate with the outside. A first communication unit of the first treating apparatus 10 for communication may be configured to enable communication in various ways such as Bluetooth and Wi-Fi. However, it is not necessary that the first communication unit be provided.

[0107] When the first communication unit is provided, the first treating apparatus 10 may communicate directly with a user terminal 3 or communicate with a communication medium 4 disposed outside the laundry treating apparatus 1. In the case of communicating with the communication medium 4, information exchange with a server 2 is possible through the communication medium 4.

[0108] The user terminal 3 may be any one of a variety of devices having a communication function. For example, the terminal 3 may be any one of a variety of devices having a communication function, such as a mobile phone, a computer, or a tablet PC.

[0109] The first treating apparatus 10 may exchange information with the terminal 3 through a communication process with the terminal 3 or exchange information with the server 2 through a communication process with the communication medium 4, as needed.

[0110] Furthermore, the terminal 3 may exchange information with the server 2, and the first treating apparatus 10 may exchange information with the server 2 through the communication medium 4, thereby indirectly exchanging information with the terminal 3.

[0111] FIG. 3 shows a laundry treating apparatus 1

including a first treating apparatus 10 and a second treating apparatus 20 according to an embodiment of the present disclosure. The first treating apparatus 10 and the second treating apparatus 20 may be wired to exchange information, or the information may be exchanged wirelessly as shown in FIG. 3.

[0112] For example, the first treating apparatus 10 and the second treating apparatus 20 may be connected using a direct wireless communication method, such as Bluetooth, to exchange information, may communicate with each other through the communication medium 4, or may be indirectly connected through information exchange with the server 2 via the communication medium 4. Various disposition relationships between the first treating apparatus 10 and the second treating apparatus 20 may be implemented.

[0113] Meanwhile, FIG. 4 shows the laundry treating apparatus 1 in which the first treating apparatus 10 and the second treating apparatus 20 are stacked. Referring to FIG. 4, the laundry treating apparatus according to the embodiment of the present disclosure may include a first treating apparatus 10 installed on a second treating apparatus 20.

[0114] The first treating apparatus 10 may include the first cabinet 11, the first tub 12, and the first drum 13 corresponding to the first receiving unit. The second treating apparatus 20 may include a second cabinet 21, a second tub 22, and a second drum 23 corresponding to a second receiving unit, which are different from those of the first treating apparatus 10.

[0115] The first treating apparatus 10 and the second treating apparatus 20 may perform the treating course C0 for treating the laundry independently of each other or in conjunction with each other. For example, the first treating apparatus 10 may perform a first course C1, which is one of plurality of treating courses C0 for treating the laundry, and the second treating apparatus 20 may perform a second course C2, which is one of the plurality of treating courses C0.

[0116] In the present disclosure, the treating course C0 performed by the first treating apparatus 10 may be referred to as the first course C1 and the treating course C0 performed by the second treating apparatus 20 may be referred to as the second course C2 for convenience of description. Each of the first course C1 and the second course C2 may be any one of a washing course, a drying course, and a washing-drying course.

[0117] For example, the first treating apparatus 10 may be a washing machine capable of performing the washing course C11, and the second treating apparatus 20 may be a dryer capable of performing the drying course. Alternatively, each of the first treating apparatus 10 and the second treating apparatus 20 may be a washing machine capable of performing the washing course or a dryer capable of performing the drying course.

[0118] Alternatively, at least one of the first treating apparatus 10 and the second treating apparatus 20 may be a washer-dryer capable of performing the wash-

ing course, the drying course, and the washing-drying course. For example, the first treating apparatus 10 shown in FIG. 4 may be a washer-dryer and the second treating apparatus 20 may be a washing machine.

[0119] The first treating apparatus 10 or the second treating apparatus 20 may include the heater when configured to perform the drying course, and may include the detergent supply unit and the water supply unit when configured to perform the washing course.

[0120] Meanwhile, referring to FIG. 4, in the embodiment of the present disclosure, the control panel 100 may be provided in each of the first treating apparatus 10 and the second treating apparatus 20 or may be provided in only one of the first treating apparatus 10 and the second treating apparatus 20.

[0121] That is, in the embodiment of the present disclosure, one of the first treating apparatus 10 and the second treating apparatus 20 may include the control panel 100 and the other may not include the control panel 100. In the embodiment of the present disclosure, the first treating apparatus 10 may include the control panel 100 and the second treating apparatus 20 may not include the control panel 100.

[0122] Meanwhile, FIG. 5 is a front view of the laundry treating apparatus 1 of FIG. 4. In the embodiment of the present disclosure, the first treating apparatus 10 may include a first cabinet 11 and the second treating apparatus 20 may include a second cabinet 21. However, the first treating apparatus 10 and the second treating apparatus 20 may be received in a single integrated cabinet, as needed.

[0123] The first treating apparatus 10 may be disposed on the second treating apparatus 20. The first treating apparatus 10 may include the control panel 100, and the second treating apparatus 20 may not include the control panel 100.

[0124] The first treating apparatus 10 may include a first laundry inlet 18 for loading laundry, and the second treating apparatus 20 may include a second laundry inlet 28 for loading laundry. However, the first laundry inlet 18 and the second laundry inlet 28 may not necessarily be exposed to the outside at all times.

[0125] For example, in the laundry treating apparatus 1 shown in FIG. 5, the first laundry inlet 18 may be provided in the front of the first treating apparatus 10, and the second laundry inlet 28 may be provided on the top of the second treating apparatus 20, although not shown. The detailed structure of the second treating apparatus 20 will be described later.

[0126] The first laundry inlet 18 and the first door 19 may be located at the front of the first treating apparatus 10 so as to face the user. The control panel 100 may be disposed higher than the first door 19.

[0127] In the embodiment of the present disclosure, the first treating apparatus 10 may have large volume than the second treating apparatus 20. That is, the amount of laundry that can be treated by the first treating apparatus 10 may be greater than the amount of laundry

that can be treated by the second treating apparatus 20.

[0128] Accordingly, the height of the first treating apparatus 10 may be higher than the height of the second treating apparatus 20. The volume of the first drum 13 may be greater than the volume of the second drum 23. The user may select and use one or both of the first treating device 10 and the second treating device 20 depending on the amount of laundry to be treated.

[0129] Meanwhile, FIG. 6 is a view showing the second treating apparatus 20 disposed under the first treating apparatus 10 in the embodiment of the present disclosure.

[0130] When the second treating apparatus 20 is disposed under the first treating apparatus 10, i.e., when the second treating apparatus 20 is configured to support the load of the first treating apparatus 10, the second treating apparatus 20 may be configured as a front-loading type like the first treating apparatus 10, may be a top-loading type but include an apparatus drawer 40 configured to be withdrawn forward from the second cabinet 21.

[0131] FIG. 6 shows a second treating apparatus 20 including an apparatus drawer 40 that is inserted into or withdrawn from the second cabinet 21. The second treating apparatus 20 may include a second cabinet 21, an apparatus drawer 40, a second tub 22, and a second receiving unit.

[0132] The second receiving unit may be provided in the second cabinet 21 to receive laundry. The second receiving unit may be configured in various forms. For example, the second receiving unit may be in the form of a basket provided in the second door 29 or a second drum 23 provided in the second tub 22, and may be provided in plural.

[0133] That is, in the embodiment of the present disclosure, the second receiving unit may include a second drum 23. A space in which the apparatus drawer 40 is received may be formed in the second cabinet 21. The second tub 22 and the second drum 23 may be provided in the apparatus drawer 40. The second laundry inlet 28 through which laundry is loaded may be provided in the top of the apparatus drawer.

[0134] Meanwhile, FIG. 7 is a sectional view showing the interior of the second treating apparatus 20 shown in FIG. 6. While FIG. 7 shows the second treating apparatus 20 in the form of a washing machine capable of washing laundry, this is for illustrative purposes only and does not necessarily limit the second treating apparatus 20 to a washing machine.

[0135] For example, the second treating apparatus 20 may be configured as a dryer by omitting the second tub 22 or the like, or may be configured as a washer-dryer by further including a heater. However, for convenience of description, the second treating apparatus 20 will be described hereinafter based on the structure shown in FIG. 7 unless otherwise mentioned.

[0136] The second treating apparatus 20 may include a second cabinet 21 and an apparatus drawer 40. The second cabinet 21 may be disposed under the first ca-

binet 11 to support the load of the first cabinet 11. In addition, the apparatus drawer 40 may be moved rearward to be received in the second cabinet 21 or may be moved forward to be withdrawn from the second cabinet 21.

[0137] An opening through which the apparatus drawer 40 is moved may be formed in the front of the second cabinet 21. The second cabinet 21 may be a drawer-type treating apparatus having a length in a height direction less than a length in a width direction.

[0138] The apparatus drawer 40 may be provided at the front thereof with a gripping portion configured to be gripped by the user. The user may grip the gripping portion provided at the front of the apparatus drawer 40 received in the second cabinet 21 to withdraw the apparatus drawer 40.

[0139] The second tub 22 and the second drum 23 may be provided in the apparatus drawer 40. At least a part of each of the second tub 22 and the second drum 23 may be withdrawn from the second cabinet 21 along with the apparatus drawer 40. The second tub 22 may be configured to receive water therein, and the second drum 23 may be rotatably mounted in the second tub 22 and configured to receive laundry loaded through the second laundry inlet 28.

[0140] In the embodiment of the present disclosure, the first treating apparatus 10 may be a front-loading type and the second treating apparatus 20 may be a top-loading type. The first laundry inlet 18 of the first treating apparatus 10 may be located at the front of the first cabinet 11, and the second laundry inlet 28 of the second treating apparatus 20 may be located at the top of the apparatus drawer 40.

[0141] The second door 29 configured to open and close the second laundry inlet 28 may be provided at the top of the apparatus drawer 40. However, the present disclosure is not necessarily limited thereto, and the second laundry inlet 28 of the second treating apparatus 20 may also be located at the front of the second cabinet 21.

[0142] The second treating apparatus 20 may include a second driving unit 24. The second driving unit 24 may be fixed to the second tub 22, the second cabinet 21, or the apparatus drawer 40. The second driving unit 24 may be coupled to the second drum 23 to rotate the second drum 23.

[0143] The second treating apparatus 20 may include a second water supply unit 25. The second water supply unit 25 may be connected to the outside of the second cabinet 21 to receive water therefrom. The second water supply unit 25 may be connected to the first treating apparatus 10 or an external water source to receive water therefrom.

[0144] The second treating apparatus 20 may include a second detergent supply unit 26. The second detergent supply unit 26 may be configured to supply detergent into the second tub 22 for the treating course C0 performed in the second treating apparatus 20.

[0145] The second detergent supply unit 26 may store detergent independently of the first detergent supply unit 16 or may receive detergent from the first detergent supply unit 16 and provide the same to the second tub 22.

[0146] The second water supply unit 25 may be directly connected to the second tub 22 to supply water into the second tub 22 or may be connected to the second detergent supply unit 26 to supply water to the second detergent supply unit 26, and the second detergent supply unit 26 may supply both water and detergent into the second tub 22.

[0147] The second treating apparatus 20 may include a second drainage unit 27, and the second drainage unit 27 may be configured to discharge the water in the second tub 22 to the outside of the second cabinet 21.

[0148] Meanwhile, FIG. 8 is a conceptual view schematically showing the connection relationship between the controller 70, the first treating apparatus 10, and the second treating apparatus 20 in the embodiment of the present disclosure.

[0149] In the embodiment of the present disclosure, the controller 70 may be provided in one or in plural. For example, the controller 70 may be provided at only one of the first treating apparatus 10 and the second treating apparatus 20, or may be defined as including a first controller 70 provided in the first treating apparatus 10 and a second controller 70 provided in the second treating apparatus 20.

[0150] In one treating apparatus, the controllers 70 may be provided in one or in plural, as needed. For example, the controller 70 may be provided in plural and configured to control different power consuming devices.

[0151] For example, the controller 70 may include a driving controller 70 configured to control the driving unit, a water supply controller 70 configured to control the water supply unit, a drainage controller 70 configured to control the drainage unit, a panel controller 70 configured to control the control panel 100.

[0152] In addition, the controller 70 may be defined as a plurality of controllers different from each other when viewed from a controlled processing perspective.

[0153] For example, the controller 70 may include at least one of a storage unit configured to store information, a processing unit configured to process the information, and a communication unit configured to perform communication in a wired or wireless fashion.

[0154] That is, although the controller 70 may be referred to as a single unit in the present disclosure, the controller may be referred to as a plurality of controllers 70 from structural and control role perspectives, as needed.

[0155] The controller 70 may control the first treating apparatus 10 and the second treating apparatus 20. The controller 70 may be provided in any one or each of the first treating apparatus 10 and the second treating apparatus 20.

[0156] The controller 70 may be directly or indirectly

connected to the first drum 13 of the first treating apparatus 10 and the second drum 23 of the second treating apparatus 20 to rotate the first drum 13 in order to perform the first course C1 or to rotate the second drum 23 in order to perform the second course C2.

[0157] The controller 70 is connected to an output unit 110 provided in the control panel 100 to control a screen D1 output from the output unit 110. A detailed description of the screen D1 output from the output unit 110 will be given later.

[0158] Meanwhile, a control panel 100 according to an embodiment of the present disclosure is shown in FIG. 9. The laundry treating apparatus 1 according to the embodiment of the present disclosure may include an input unit 120 and an output unit, as described above. The input unit 120 and the output unit may be provided in the control panel 100, but the present disclosure is not necessarily limited thereto.

[0159] The output unit may provide various kinds of information, such as auditory information and visual information, to the user. For example, the output unit may include a speaker configured to output sound to provide information, and may include a screen output device configured to output the screen D1 that provides information to the user.

[0160] Hereinafter, the output unit 110 will be described based on the form that includes a display and is configured to output the screen D1 for convenience of description. However, the speaker may be further included.

[0161] In the embodiment of the present disclosure, the output unit 110 may output various screens D1. The controller 70 may prestore various screens D1 to be output from the output unit 110. The controller 70 may control the output unit 110 to change the screens D1 output from the output unit 110.

[0162] In the embodiment of the present disclosure, the screens D1 output from the output unit 110 may include a first apparatus screen associated with the first treating apparatus 10 and a second apparatus screen associated with the second treating apparatus 20. In addition, the screen D1 may include a simultaneous screen D40 on which information related to the first treating apparatus 10 and information related to the second treating apparatus 20 are displayed together.

[0163] Meanwhile, the plurality of screens D1 output from the output unit 110 may be divided according to information displayed. For example, the screens D1 may include a start screen D10 that provides boot information of the first treating apparatus 10 or the second treating apparatus 20, a course selection screen D20 that displays a treating course C0 that can be performed by the first treating apparatus 10 or the second treating apparatus 20, an option display screen that displays option information of the treating course C0, an option setting screen for setting one of a plurality of options for the treating course C0, and a course progress screen D30 that displays progress information of the treating course C0 being performed by the first treating apparatus 10 or

the second treating apparatus 20.

[0164] Meanwhile, the plurality of screens D1 that are divided according to the information displayed may be further divided according to the treating apparatus. For example, the course selection screen D20 may be divided into a first course selection screen D20 that displays a first course C1 of the first treating apparatus 10 and a second course selection screen D20 that displays a second course C2 of the second treating apparatus 20.

[0165] The course progress screen D30 may include a first course progress screen D30 that displays progress information of the first course C1 and a second course progress screen D30 that displays progress information of the second course C2.

[0166] The controller 70 may control the output unit 110 to output any one of the first apparatus screen for the first treating apparatus 10, the second apparatus screen for the second treating apparatus 20, and the simultaneous screen D40 that displays both information of the first treating apparatus 10 and information of the second treating apparatus 20.

[0167] In addition, the controller 70 may control the output unit 110 to output any one of the plurality of screens D1, such as the start screen D10, the course selection screen D20, and the course progress screen D30, depending on the power state of the treating apparatuses or the progress state of each treating course C0.

[0168] The input unit 120 may be configured to receive user commands. For example, the input unit 120 may generate an input signal in response to user manipulation, and the input signal may be transmitted to the controller 70 so as to be converted into various user commands.

[0169] In the embodiment of the present disclosure, the output unit 110 may display various objects on the screen D1. The various objects may be displayed on the screen for selection, and the input unit 120 may receive a user command for the user to select one of the displays on the screen D1.

[0170] For example, the input unit 120 may be provided in the output unit 110 and configured to detect a touch signal from the user on the screen D1. That is, the input unit 120 may correspond to a touch film provided on the display on which the screen D1 is output from the output unit 110.

[0171] In the embodiment of the present disclosure, each of the input unit 120 and the output unit 110 may be provided in any one of the first treating apparatus 10 and the second treating apparatus 20. In addition, the input unit 120 and the output unit 110 may be provided on any one of the first treating apparatus 10 and the second treating apparatus 20.

[0172] Meanwhile, in the embodiment of the present disclosure, a power button 130 and a start-stop button 140 may be provided. The buttons may be of various types, such as a mechanical type or a touch type.

[0173] The power button 130 may be provided to power on or off the first treating apparatus 10 and/or the second

treating apparatus 20. The start-stop button 140 may be provided for the user to start or stop the first course C1 of the first treating apparatus 10 and/or the second course C2 of the second treating apparatus 20.

[0174] The power button 130 and the start-stop button 140 may be provided for each of the first treating apparatus 10 and the second treating apparatus 20, but in the embodiment of the present disclosure, the power button 130 and the start-stop button 140 may be provided for only one of the first treating apparatus 10 and the second treating apparatus 20.

[0175] For example, when the first treating apparatus 10 is provided with the power button 130 and the start-stop button 140, the second treating apparatus 20 may not have the power button 130 and the start-stop button 140. In addition, the first treating apparatus 10 may have one power button 130 and one start-stop button 140.

[0176] In this case, the power button 130 may be used to change the power state of the second treating apparatus 20 in addition to the power state of the first treating apparatus 10. The power button 130 may regulate the power of one of the first treating apparatus 10 and the second treating apparatus 20 selected by the user.

[0177] In addition, the start-stop button 140 may be used to determine whether to start/stop the first course C1 and whether to start/stop the second course C2. The start-stop button 140 may be used to determine whether to start/stop the course of one of the first treating apparatus 10 and the second treating apparatus 20 selected by the user.

[0178] Meanwhile, the laundry treating apparatus 1 according to the embodiment of the present disclosure may not have an apparatus switching button for switching between the first apparatus screen associated with the first treating apparatus 10 and the second apparatus screen associated with the second treating apparatus 20 in the output unit 110.

[0179] As will be described later, in the embodiment of the present disclosure, the user may select one of the mode related to the first treating apparatus 10 and the mode related to the second treating apparatus 20 displayed on the output unit 110 to determine the treating apparatus displayed on the screen D1.

[0180] Meanwhile, the control panel 100 may be provided in the front panel of the cabinet 10. The front panel may be provided with the laundry inlet 18, and may be provided with a door 19 configured to open and close the laundry inlet 18.

[0181] The control panel 100 may be disposed above the door 19 in the front panel. The control panel 100 may have a shape approximately extending in the width direction of the cabinet 10, wherein the extending length of the control panel 100 may be less than the width of the cabinet 10.

[0182] However, the position of the output unit 110 and/or the input unit 120 is not necessarily limited thereto, and for example, the output unit 110 and/or the input unit 120 may be provided in the first door 19 instead of the

front panel.

[0183] When the control panel 100 is provided in the first door 19, a substrate constituting the control panel 100, an outer panel, the input unit 120, and the output unit 110 may be provided in the first door 19.

[0184] Even when the output unit 110 and/or the input unit 120 is provided in the second treating apparatus 20, the output unit and/or the input unit may be provided in the front panel of the second cabinet 21 or in the second door 29.

[0185] The power button 130, the start-stop button 140, and the output unit 110 may be provided in the control panel 100. For example, the power button 130 and the start-stop button 140 may be disposed on both sides of the output unit 110, which includes a display and outputs a screen.

[0186] The power button 130 may be disposed on one side of the output unit 110, and the start-stop button 140 may be disposed on the other side of the output unit 110. The power button 130, the start-stop button 140, and the output unit 110 may be located in the control panel 100 based on the perimeter of the control panel 110, and the color of each of the power button 130 and the start-stop button 140 may be identical or similar to the color of the control panel 100.

[0187] Meanwhile, in FIG. 10, an operation process of the laundry treating apparatus 1 according to the embodiment of the present disclosure and the screen D1 of the output unit 110 based thereon are conceptually shown.

[0188] First, when power is applied to the laundry treating apparatus 1 through the power button 130, a start process P1 in which the controller 70 determines the states of various components and prepares to perform a course may be performed, and the output unit 110 may output the start screen D10 that informs the user of the start process P1.

[0189] After the start process P1 is completed, the controller 70 may perform the course selection process P2. A plurality of treating courses C0 for treating the laundry may be prestored in the controller 70, and the user may select any one of the plurality of treating courses C0 in the course selection process P2.

[0190] Also, in the course selection process P2, various options for the course may be adjusted by the user. The output unit 110 may output an option display screen for providing option information in the course selection process P2. In addition, the output unit 110 may output an option setting screen for changing a setting value of one of the options of a course that is a current target to be performed in the course selection process P2.

[0191] When the start-stop button 140 is manipulated in the state in which any one treating course C0 is a target to be performed in the course selection process P2, the controller 70 may perform a course progress process P3 in which the treating course C0 is performed.

[0192] In the course progress process P3, the controller 70 may perform the treating course C0 in which options, etc. are determined through the course selection

process P2, and the output unit 110 may output a course progress screen D30 that displays the progress of the treating course C0.

[0193] Meanwhile, FIG. 11 shows the start screen D10 output from the output unit 110 in accordance with the embodiment of the present disclosure. The start screen D10 may include an image that informs the user of power on or may include various kinds of information for performing the treating course C0.

[0194] The screen D1 shown in FIG. 11 corresponds to a welcome screen that informs of power on of the laundry treating apparatus, which is one of the start screens D10. The welcome screen D1 may be a screen output from the output unit 110 at the beginning of power on of the laundry treating apparatus 1. The welcome screen may include various phrases and images to familiarize the user or to inform of power on.

[0195] FIG. 12 shows an example of the course selection screen D20. The course selection screen D20 may display the name of a course C0 to be performed, which is one of the plurality of treating courses C0.

[0196] Specifically, the course selection screen D20 may display at least some of the plurality of treating courses C0. The course selection screen D20 may display a course object D103 corresponding to each of the plurality of treating courses C0 so as to be selected by the user.

[0197] The user may select any one of the plurality of treating courses C0 displayed on the course selection screen D20 as a treating course to be performed by a user command through the input unit 120.

[0198] In the course selection screen D20, the plurality of course objects D103 may be arranged in one direction. For example, the plurality of course objects D103 may be arranged in a width direction, a height direction, or an oblique direction of the cabinet 11.

[0199] The course objects D103 other than the target to be performed may be disposed on one side and/or the other side of the target to be performed. The target to be performed may be displayed so as to have a larger size than the others of the plurality of course objects D103.

[0200] For example, as shown in FIG. 12, the course selection screen D20 may display a plurality of treating courses C0, one of which may have a larger size than the others and may be centrally disposed and displayed as the target to be performed. The user may change the treating course C0 to be performed by manipulating the input unit 120, such as by inputting a touch signal to slide the output unit 110.

[0201] Meanwhile, as described above, the course selection screen D20 may display a course object D103 representing each treating course C0, and the course object D103 may have a border line so as to be visually identified by the user.

[0202] In addition, the course object D103 may include a color or image that is different from the remainder of the screen D1 except for the course object D103.

[0203] The course object D103 may include a course

name D104 indicating the name of a treating course C0 corresponding thereto, and may include an estimated time D105 indicating the estimated time when the treating course C0 is performed.

[0204] Meanwhile, when a user command, an input signal, or a touch signal for selecting the course object D103 through the input unit 120 is transmitted to the controller 70, the controller 70 may control the output unit 110 to output an option display screen on which option information of the treating course C0 is displayed.

[0205] The user may select the course object D103 to output the option display screen, and may select any one of the plurality of options displayed on the option display screen to change the setting value for the option.

[0206] Meanwhile, the course selection screen D20 may display a mode selection object D51 for displaying a plurality of modes that may be selected by the first treating apparatus 10 and the second treating apparatus 20 on the screen. The mode selection object may be aligned in the same direction as the disposition direction of the first treating apparatus and the second treating apparatus. That is, when the first treating apparatus is disposed above and the second treating apparatus is disposed below, the mode performed by the first treating apparatus may be disposed above and the mode performed by the second treating apparatus may be disposed below, whereby the modes may be aligned up and down.

[0207] Specifically, in the embodiment of the present disclosure, the first treating apparatus 10 and/or the second treating apparatus 20 may be operated in at least one mode. For example, the first treating apparatus 10 may be operated in any one of a washing mode M11 in which the wash course C11 for washing the laundry is performed, a drying mode M12 in which the drying course C12 is performed, and a washing-drying mode M13 in which the washing-drying course C13 is performed. The second treating apparatus 20 may also be operated in at least one mode.

[0208] The course selection screen D20 may display treating courses C0 according to a mode that is currently being performed, among the plurality of modes including the first treating apparatus 10 and the second treating apparatus 20. FIG. 12 shows a course selection screen D20 on which the washing-drying mode M13 of the first treating apparatus 10 is selected and washing-drying courses C13 according to the washing-drying mode M13 are displayed, as an example.

[0209] The mode selection object D51 may be displayed to include the name of the mode that is currently being performed, and when the mode selection object D51 is selected, the controller 70 may control the output unit 110 to output a mode selection screen D50 on which the plurality of modes is displayed for selection. A further detailed description of the plurality of modes will be given later.

[0210] Meanwhile, in consideration of the limited size of the screen D1, the course selection screen D20 may

display only some of the plurality of treating courses C0 set in the controller 70. FIG. 12 shows the course selection screen D20 on which some of the washing-drying courses C13 according to the washing-drying mode M13 are displayed.

[0211] The user may change the treating course C0 displayed on the course selection screen D20 by an input signal such as sliding the screen D1.

[0212] However, if the number of treating courses C0 stored in the controller 70 in the mode is large, it may be cumbersome for the user to check all of the plurality of treating courses C0 by sliding or the like.

[0213] Accordingly, the output unit 110 may display a course view object D101 for outputting a larger number of treating courses C0 than the number displayed at once on the course selection screen D20 as selectable.

[0214] When the course view object D101 is selected by the user, the output unit 110 may display a plurality of treating courses C0 that may be provided to the user according to the current mode on the screen in a number greater than the number displayed on the course selection screen D20.

[0215] For example, when the course overview object D101 is selected, the output unit 110 may display all of the plurality of treating courses C0 that are currently available as selectable. If the number of the plurality of treating courses C0 is excessively large, the plurality of treating courses C0 may be displayed on the screen in the form of a plurality of pages.

[0216] Meanwhile, the course selection screen D20 may display a setting object D102. When the setting object D102 is selected by the user, a setting screen for setting the first treating apparatus 10 or the second treating apparatus 20 may be displayed on the screen.

[0217] The course selection screen D20 may display an indicator D110. The indicator D110 is an indication for indicating the state of the first treating apparatus 10 or the second treating apparatus 20, and may be displayed in a shape corresponding to information to be provided to the user.

[0218] The indicator D110 displayed on the screen may be provided in plural to indicate different kinds of information. For example, the plurality of indicators D110 may indicate various kinds of apparatus information such as communication state information and schedule state information.

[0219] Meanwhile, FIG. 13 shows a course progress screen D30 according to an embodiment of the present disclosure. When the start-stop button 140 is manipulated in the state in which one of the treating courses C0 is displayed as a target to be performed on the course selection screen D20 or when the start-stop button 140 is manipulated on the option display screen for one of the treating courses C0, the controller 70 may perform the treating course C0, and the output unit 110 may output the course progress screen D30 that displays progress information of the treating course C0.

[0220] The course progress screen D30 may include

the mode selection object D51, the setting object D102, and the indicator D110. In addition, the course progress screen D30 may display the course object D103, and the course object D103 may include a course name D104 indicating the name of the treating course C0 that is currently being performed, a remaining time D106 indicating the remaining time until completion of the treating course C0 that is currently being performed, a cycle description D107 to describe the cycle that is currently being performed during the treating course C0, and a time display D108 indicating the extent to which the treating course C0 has been performed heretofore.

[0221] The time display D108 may be displayed in a certain line corresponding to the entirety of the treating course C0 to display differently the cycle that has been treated and the remaining cycle or the time taken heretofore and the remaining time such that the user can conveniently check the remaining cycle or the remaining time.

[0222] Meanwhile, FIG. 14 shows a process in which the first course selection screen D21 output from the output unit 100 is switched to a first course progress screen D31 in the embodiment of the present disclosure. When the start-stop button 140 is manipulated in the state in which the first course selection screen D21 is output, the output unit 110 outputs the first course progress screen D31.

[0223] A single start-stop button 140 is provided in only one of the first treating apparatus 10 and the second treating apparatus 20. That is, when provided in the first treating apparatus 10, the start-stop button is not provided in the second treating apparatus 20, and when provided in the second treating apparatus 20, the start-stop button is not provided in the first treating apparatus 10. Therefore, it is within the scope of the present disclosure that the plurality of treating apparatuses have only one start-stop button 140 and that the plurality of treating apparatuses can be started or stopped with only one start-stop button 140.

[0224] When the first treating apparatus 10 is selected, the first course selection screen D21 is displayed, and the operation mode in which the first treating apparatus 10 is selected may be, but is not necessarily limited to, a washing-drying mode, a washing mode, or a drying mode.

[0225] When the operation mode of the first treating apparatus 10 is selected, the output unit 110 outputs the first course selection screen D21 corresponding to the operation mode. In the case of the washing-drying mode, a screen (D1) on which a standard course, an artificial intelligence course, a bedding course, a small quantity rapid course, a towel course, an economical boiling course, a course in which rinsing, spin-drying, and drying are sequentially performed, a course in which spin-drying and drying are sequentially performed, and a drum sterilization care course can be selected may be output. In the case of the washing mode, a wool/delicate course and a timed washing course may be further included in

the first course selection screen (D21) of the washing-drying mode, and the course including the drying cycle may be omitted. In the case of the drying mode, the course of the washing mode may include a bedding shaking course, a time drying course, and a steam sterilization course, and the economical boiling course, the timed washing course, and the course in which rinsing and spin-drying are sequentially performed may be omitted. However, the present disclosure is not necessarily limited thereto, and other courses may be further included in addition to the above courses.

[0226] Meanwhile, FIG. 15 shows a process in which the second course selection screen D22 output from the output unit 110 is switched to a second course progress screen D32 in the embodiment of the present disclosure. When the start-stop button 140 is manipulated in the state in which the second course selection screen D22 is output, the output unit 110 outputs the second course progress screen D32.

[0227] When the second treating apparatus 20 is selected, the second course selection screen D22 is output, and the operation mode in which the second treating apparatus 20 is selected may be a small quantity washing mode but is not necessarily limited thereto, and the same mode as the first treating apparatus 10 may be further included, other modes may be further included, and the mode of the second treating apparatus 20 is not limited thereto. When small quantity washing is required, the small quantity washing mode may be used to enhance user convenience, but the capacity equal to or greater than the capacity of the first treating apparatus 10 may be provided. However, the following description is limited to the small quantity washing mode for convenience of description.

[0228] When the operation mode of the second treating apparatus 20 is selected, the output unit 110 outputs the second course selection screen D22 corresponding to the operation mode. In the case of the small quantity washing mode, the screen D1 on which a small quantity washing course, a small quantity boiling course, a baby clothes course, a course in which rinsing and spin-drying are sequentially performed, a drum sterilization course, a cotton underwear course, a wool/delicate course, and a pet care washing course can be selected may be output. However, the present disclosure is not necessarily limited thereto, and other courses may be included in addition to the above courses.

[0229] Meanwhile, FIG. 16 shows a process of switching from the first course selection screen D21 of the washing-drying mode of the first treating apparatus 10 to the course selection screen D20 of the drying mode in the embodiment of the present disclosure.

[0230] The first course selection screen D21 may include a mode selection object D51 selectable by the output unit 110 to output a list of modes. The mode selection object D51 may be labeled with the name of the currently selected mode, but is not necessarily limited thereto.

[0231] When the mode selection object D51 is selected, the first course selection screen D21 may be blurred and a mode selection screen D50 on which the list of modes is displayed may be output. The mode selection screen D50 may output all selectable modes of the first treating apparatus 10 and the second treating apparatus 20.

[0232] The mode selection screen D50 may be output such that the plurality of operation modes performed by the first treating apparatus and the plurality of operation modes performed by the second treating apparatus are separated from each other. For example, a bar-shaped separator may be included between the lowermost one of the plurality of operation modes performed by the first treating apparatus and the second treating apparatus. In addition, an object indicating the mode currently being performed may be included.

[0233] Selecting one of the modes output from the mode selection screen D50 may cause switching to the course selection screen D20 corresponding to the selected mode, and a screen exit object for exiting the mode selection screen and switching to the course progress screen currently in progress may be located at a lower end of the mode selection screen.

[0234] Meanwhile, FIG. 17 shows a process of switching from the course selection screen D20 of the washing-drying mode, which is one of the modes of the first treating apparatus 10, to the course selection screen D20 of the mode that can be performed by the second treating apparatus 20, in the embodiment of the present disclosure.

[0235] When the mode of the second treating apparatus 20 is selected by selecting the mode selection object D51 in the first treating apparatus 10, the output unit 110 may output the course selection screen D20 of the mode that can be performed by the second treating apparatus 20.

[0236] It may be possible to change the mode in the first treating apparatus 10 and to change the mode of the first treating apparatus 10 to the mode of the second treating apparatus 20. Alternatively, it may be possible to change the mode of the second treating apparatus 20 to the mode of the first treating apparatus 10.

[0237] In addition, when an additional treating apparatus is provided in addition to the first treating apparatus 10 and the second treating apparatus 20, it may be possible to change the mode between the additional treating apparatus and the first treating apparatus 10 and the second treating apparatus 20.

[0238] Meanwhile, FIG. 18 shows a process of switching from the first course progress screen D31 that displays the first course progress information of the first treating apparatus 10 to the first course selection screen D21 when the first course is paused in the embodiment of the present disclosure.

[0239] When the start-stop button 140 is manipulated on the first course progress screen D31, the first course in progress may be paused, and the output unit 110 may

output the first course selection screen D21 on which the first course object D41 is switched from an indication that the course is in progress to an indication that the course is paused. On the first course selection screen, a plurality of first course objects D41 performing in the first course may be arranged in one direction.

[0240] The first course object D41 may display the course name, the remaining time, the progress state, and the like, but is not necessarily limited thereto.

[0241] When the start-stop button 140 is manipulated on the paused first course selection screen D21, the first course may be resumed and switching to the first course progress screen D31 may be performed.

[0242] The same is true when the start-stop button 140 is manipulated on the second course progress screen D32 or when the start-stop button 140 is manipulated on the paused second course selection screen D22.

[0243] Meanwhile, FIG. 19 shows a process of performing the second course when the first course is being performed and the second course is before being performed in the embodiment of the present disclosure.

[0244] If the first course is in progress and the second course is not in progress, when the mode of the second treating apparatus 20 is selected through the mode selection object D51 on the first course progress screen D31, the output unit 110 may output the second course selection screen D22.

[0245] When the second course selection screen D22 is output, a second course to be performed may be selected from among a plurality of second courses, and the selected second course may be performed when the start-stop button 140 is manipulated.

[0246] Even if the second course is being performed and the first course is before being performed, when the mode of the first treating apparatus 10 is selected through the mode selection object D51 on the second course progress screen D32, the output unit 110 may output the first course selection screen D21, and the second course may be performed when the start-stop button 140 is manipulated.

[0247] Meanwhile, FIG. 20 shows a process in which the previously performed course is canceled when the course is changed while the first course is being performed in the embodiment of the present disclosure.

[0248] When only the first course is being performed, the output unit 110 may output the first course progress screen D31, and when only the second course is being performed, the output unit 110 may output the second course progress screen D32.

[0249] When any one of the first course and the second course is being performed, the course progress screen D30 corresponding to each course may be output, and when the start-stop button 140 is manipulated in the state in which the course progress screen D30 is output, the course being performed may be paused and the course selection screen D20 corresponding to each of the first treating apparatus 10 and the second treating apparatus 20 may be output.

[0250] When the course selection screen D20 is output and a course other than the paused course is selected, the paused course may be canceled.

[0251] Here, selection may mean clicking on a plurality of course selection objects displayed on the course selection screen D20, swiping left and right to center a selection object of another course, or selecting a course view object to display all available courses and clicking on a course other than the paused course among the displayed courses.

[0252] When the paused course is canceled, the output unit 110 may output a message indicating that the course has changed and the previous course has been canceled.

[0253] When the start-stop button 140 is manipulated in the state in which no other manipulation or input is made on the course selection screen D20 output during the pause, the paused course may be resumed in that state.

[0254] Meanwhile, FIG. 21 shows a simultaneous screen D40 according to an embodiment of the present disclosure.

[0255] When the first course and the second course are in progress simultaneously, the output unit 110 may output a simultaneous screen D40 that displays both the progress information of the first course and the progress information of the second course.

[0256] The simultaneous screen D40 may include a first selection object D41 selectable such that the progress information of the first course is displayed and the option information of the first course is displayed and a second selection object D42 selectable such that the progress information of the second course is displayed and the option information of the second course is displayed.

[0257] Meanwhile, FIG. 22 shows the case in which the start-stop button 140 is manipulated on the simultaneous screen D40 in the embodiment of the present disclosure.

[0258] When the start-stop button 140 is manipulated on the simultaneous screen D40, the first course and the second course may remain in the state of being performed or paused. That is, when the start-stop button 140 is manipulated on the simultaneous screen D40, no change is made to the course in progress.

[0259] Specifically, when the start-stop button 140 is manipulated on the simultaneous screen D40 while both the first course and the second course are being performed, both the first course and the second course may continue to be performed. When the start-stop button 140 is manipulated while the first course is being performed and the second course is paused, the first course may continue to be performed and the second course may remain paused. When the start-stop button 140 is manipulated while both the first course and the second course are paused, both the first course and the second course may remain paused. When the start-stop button 140 is manipulated while the first course is paused and the second course is being performed, the first course

may remain paused and the second course may continue to be performed.

[0260] Meanwhile, FIG. 23 shows a message output from the output unit 110 when the start-stop button 140 is manipulated on the simultaneous screen D40 in the embodiment of the present disclosure.

[0261] As described above, when the start-stop button 140 is manipulated on the simultaneous screen D40, no change is made to the course in progress, and the output unit 110 may output a message to manipulate the start-stop button 140 after selecting one apparatus.

[0262] Meanwhile, FIG. 24 shows a process of switching from the simultaneous screen D40 to an option display screen in the embodiment of the present disclosure.

[0263] The option display screen may include a first option display screen D61 that displays option information of the first course and a second option display screen D62 that displays option information of the second course.

[0264] In the case of the washing cycle, the intensity of washing, whether to pre-wash and soak laundry, the number of rinses, the intensity of spin-drying, the change of water temperature, and on/off of steam and turbo shot may be set as options.

[0265] In the case of the drying cycle, the economy mode, the drying degree, the drying time, and on/off of steam and ironing notification may be set. The option information is not limited thereto, and other option information may be included.

[0266] The output unit 110 may output the first option display screen D61 of the first course when the first object is selected on the simultaneous screen D40, and may output the second option display screen D62 of the second course when the second object is selected.

[0267] When the course object is selected, the option display screen may be displayed, and the option display screen may include an option selection object selectable to change the option. However, when the course is in progress, the option selection object may be disabled so as not to be selected. In addition, the option selection object may display the option name, the option value, and the like.

[0268] Meanwhile, FIG. 25 shows a process in which the first option selection object D611 is activated on the first option display screen D61 in the embodiment of the present disclosure.

[0269] When the first course object D41 is selected during the progress of the first course, the first option display screen D61 may be output in the state in which the first option selection object D611 is deactivated. When the start-stop button 140 is manipulated on the first option display screen D61, the progress of the selected first course may be paused, and the first option selection object D611 may be activated to change the option by selecting any one of the first option selection objects D611 to change the option value.

[0270] Similarly, in the case of the second course, when the second course object D42 is selected during

the progress of the second course, the second option selection screen on which the second option selection object D621 is deactivated may be output. When the start-stop button 140 is manipulated in the state in which the second option selection screen is output, the second course may be paused and the second option selection object D621 may be activated for selection to change the option value.

[0271] Meanwhile, FIG. 26 shows a process of deactivating the option selection object on the option selection screen on which the option selection object is activated, in the embodiment of the present disclosure.

[0272] When the start-stop button 140 is manipulated in the state in which the course is paused and the option selection object is deactivated, the course may proceed and the option selection object may be activated.

[0273] Meanwhile, FIG. 27 shows a process of scheduling the completion time of the first treating apparatus 10 on the simultaneous screen D40 in the embodiment of the present disclosure.

[0274] When a first setting object D1021 selectable to output a setting list of the first treating apparatus 10 is selected on the simultaneous screen D40, the output unit 110 may output the setting list.

[0275] When "schedule" is selected from the setting list, the output unit 110 may output a schedule setting screen D70 including a plurality of first time setting objects D711 and a plurality of second time setting objects D712 selectable to display the time required to complete the course. When the start-stop button 140 is manipulated after selecting the time setting object, the time may be set such that the course is completed after the time elapses.

[0276] When the completion time is set, the first course progress screen D31 may be output to the output unit 110 to display the selected time.

[0277] Similarly, when a second setting object D1022 is selected, the completion time of the second course may be set. When the completion time is set, the second course progress screen D32 may be output to the output unit 110 to display the selected time.

[0278] As is apparent from the above description, embodiments of the present disclosure may provide a laundry treating apparatus capable of effectively outputting information of a plurality of treating apparatuses through a single output unit.

[0279] In addition, the embodiments of the present disclosure may provide a laundry treating apparatus capable of effectively operating a plurality of treating apparatuses using a single button.

[0280] In addition, the embodiments of the present disclosure may provide a laundry treating apparatus capable of operating or stopping a plurality of treating apparatuses using a single start-stop button.

[0281] While the present disclosure has been shown and described with reference to specific embodiments, it will be apparent to those ordinary skilled in the art that various improvements and changes may be made to the

present disclosure without departing from the technical ideas of the present disclosure as provided by the following claims.

Claims

1. A laundry treating apparatus comprising:

a first treating apparatus comprising a first receiving unit configured to receive laundry; a second treating apparatus comprising a second receiving unit configured to receive laundry; an output unit provided in the first treating apparatus or the second treating apparatus, the output unit being configured to output a screen; an input unit provided in the first treating apparatus or the second treating apparatus, the input unit being configured to receive a user command for selecting a target to be displayed on the screen; and a start-stop button provided in one of the first treating apparatus and the second treating apparatus, the start-stop button being manipulated by a user, wherein the output unit is configured to output a first course selection screen on which a first course to be performed by the first treating apparatus, among a plurality of courses for treating the laundry, is displayed for selection by the input unit and a second course selection screen on which a second course to be performed by the second treating apparatus, among the plurality of courses, is displayed for selection by the input unit, wherein, based on the start-stop button being manipulated in a state in which the first course selection screen is output to the output unit, the first course of the first treating apparatus is performed, and wherein, based on the start-stop button being manipulated in a state in which the second course selection screen is output to the output unit, the second course of the second treating apparatus is performed.

2. The laundry treating apparatus according to claim 1, wherein

the output unit is configured to output a first course progress screen configured to display progress information of the first course during a progress of the first course, and wherein, based on the start-stop button being manipulated on the first course progress screen, the first course is paused or resumed.

3. The laundry treating apparatus according to claim 2,

wherein

the first course progress screen comprises a mode selection object configured to display the second treating apparatus as selectable, and wherein, based on the second treating apparatus displayed through the mode selection object being selected in a state in which the first course is being performed and the second course is before being performed, the output unit outputs the second course selection screen.

4. The laundry treating apparatus according to claim 1, wherein

the first course is provided in plural, and wherein, based on the start-stop button being manipulated while one of the plurality of first courses is being performed, the first course is paused and the output unit outputs the first course selection screen on which the plurality of first courses is displayed.

5. The laundry treating apparatus according to claim 1, wherein

the output unit is configured to output a simultaneous screen configured to display both progress information of the first course and progress information of the second course, and wherein the simultaneous screen comprises a first course object configured to display the progress information of the first course and a second course object configured to display the progress information of the second course.

6. The laundry treating apparatus according to claim 5, wherein, based on the start-stop button being manipulated on the simultaneous screen, the progress of the first course and the progress of the second course are maintained.

7. The laundry treating apparatus according to claim 6, wherein, based on the start-stop button being manipulated on the simultaneous screen, the output unit outputs a message to select the first course or the second course.

8. The laundry treating apparatus according to claim 5, wherein, based on one of the first course object and the second course object being selected and the start-stop button is manipulated on the simultaneous screen, a course according to the one of the first course object and the second course object is paused or resumed.

9. The laundry treating apparatus according to claim 1,

wherein the output unit is configured:

to output a first option display screen configured to display option information of the first course based on the first course object corresponding to the first course being selected on the first course selection screen; and
to output a second option display screen configured to display option information of the second course based on the second course object corresponding to the second course being selected on the second course selection screen.

10. The laundry treating apparatus according to claim 9, wherein

based on the start-stop button being manipulated on the first option display screen, the first course displayed on the first option display screen is performed or stopped, and
based on the start-stop button being manipulated on the second option display screen, the second course displayed on the second option display screen is performed or stopped.

11. The laundry treating apparatus according to claim 5, wherein, in a state in which a first option display screen configured to display an option of the first course is output from the simultaneous screen, the first course is paused or resumed based on the start-stop button being manipulated on the first option display screen.

12. The laundry treating apparatus according to claim 9, wherein

the first option display screen is configured to be displayed such that the first option selection object is not selectable during a progress of the first course and such that the first option selection object is selectable in a state in which the first course is paused, and
the second option display screen is configured to be displayed such that the second option selection object is not selectable during a progress of the second course and such that the second option selection object is selectable in a state in which the second course is paused.

13. The laundry treating apparatus according to claim 1, wherein

the output unit is configured to output a first schedule setting screen on which a plurality of first time setting objects representing different completion times for the first course is displayed for selection, and wherein, based on the start-stop button being manipulated in a state in which one of the plurality of first time setting objects is selected on the first schedule set-

ting screen, scheduling of the first course is completed.

14. The laundry treating apparatus according to claim 1, wherein the input unit is provided in the output unit, the input unit being configured to detect a touch signal of a user on the screen.

15. A laundry treating apparatus comprising:

a first treating apparatus comprising a first receiving unit configured to receive laundry;
a second treating apparatus comprising a second receiving unit configured to receive laundry;
an output unit provided in the first treating apparatus or the second treating apparatus, the output unit being configured to output a screen;
an input unit provided in the first treating apparatus or the second treating apparatus, the input unit being configured to receive a user command for selecting a target to be displayed on the screen; and
a start-stop button provided in one of the first treating apparatus and the second treating apparatus, the start-stop button being manipulated by a user, wherein
wherein the output unit is configured to output a simultaneous screen configured to display both progress information of the first course and progress information of the second course, wherein the simultaneous screen comprises a first course object configured to display the progress information of the first course and a second course object configured to display the progress information of the second course, and wherein, based on the start-stop button being manipulated on the simultaneous screen, the progress of the first course and the progress of the second course are maintained, and the output unit outputs a message to select the first course or the second course.

FIG. 1

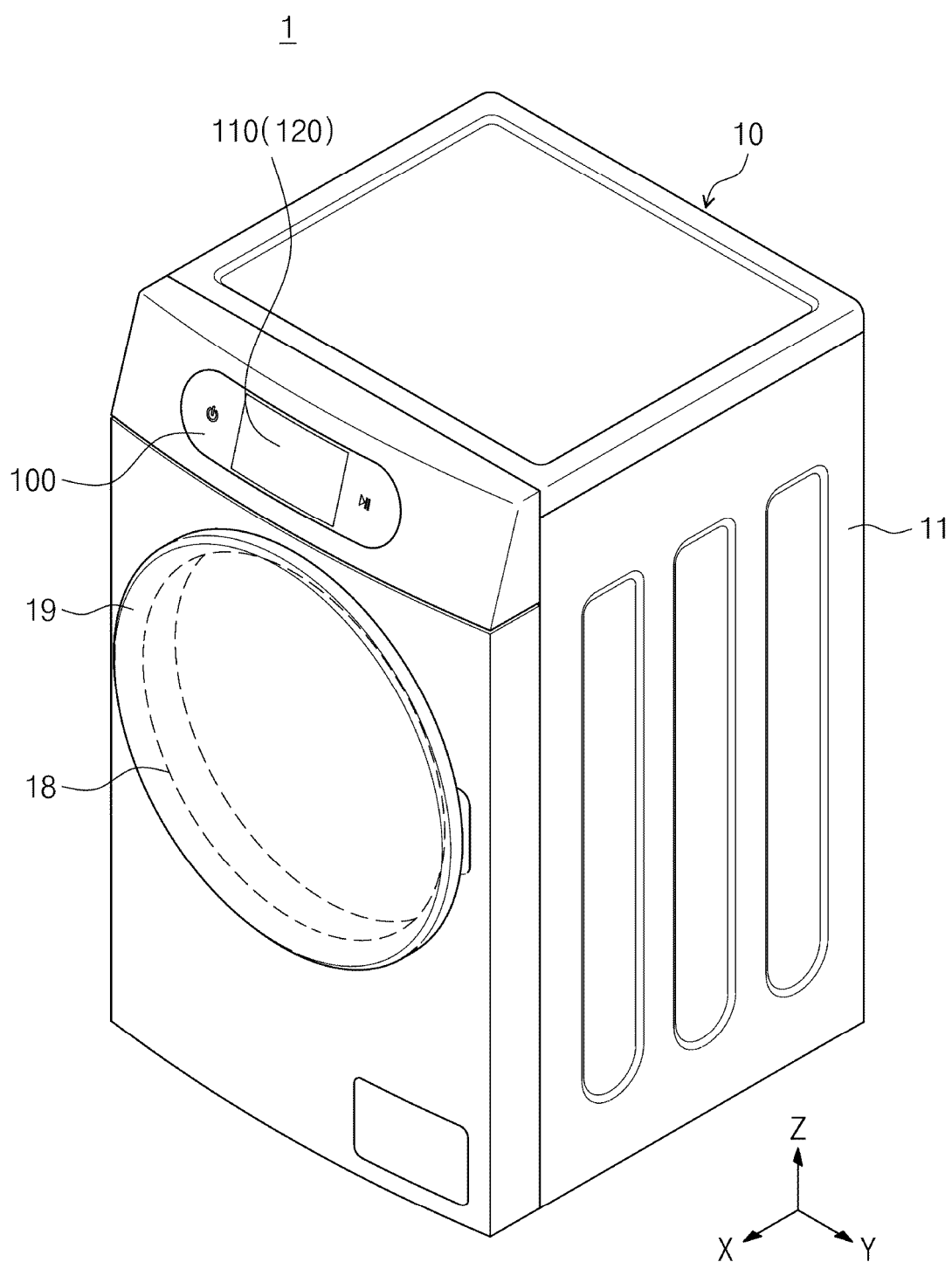


FIG. 2

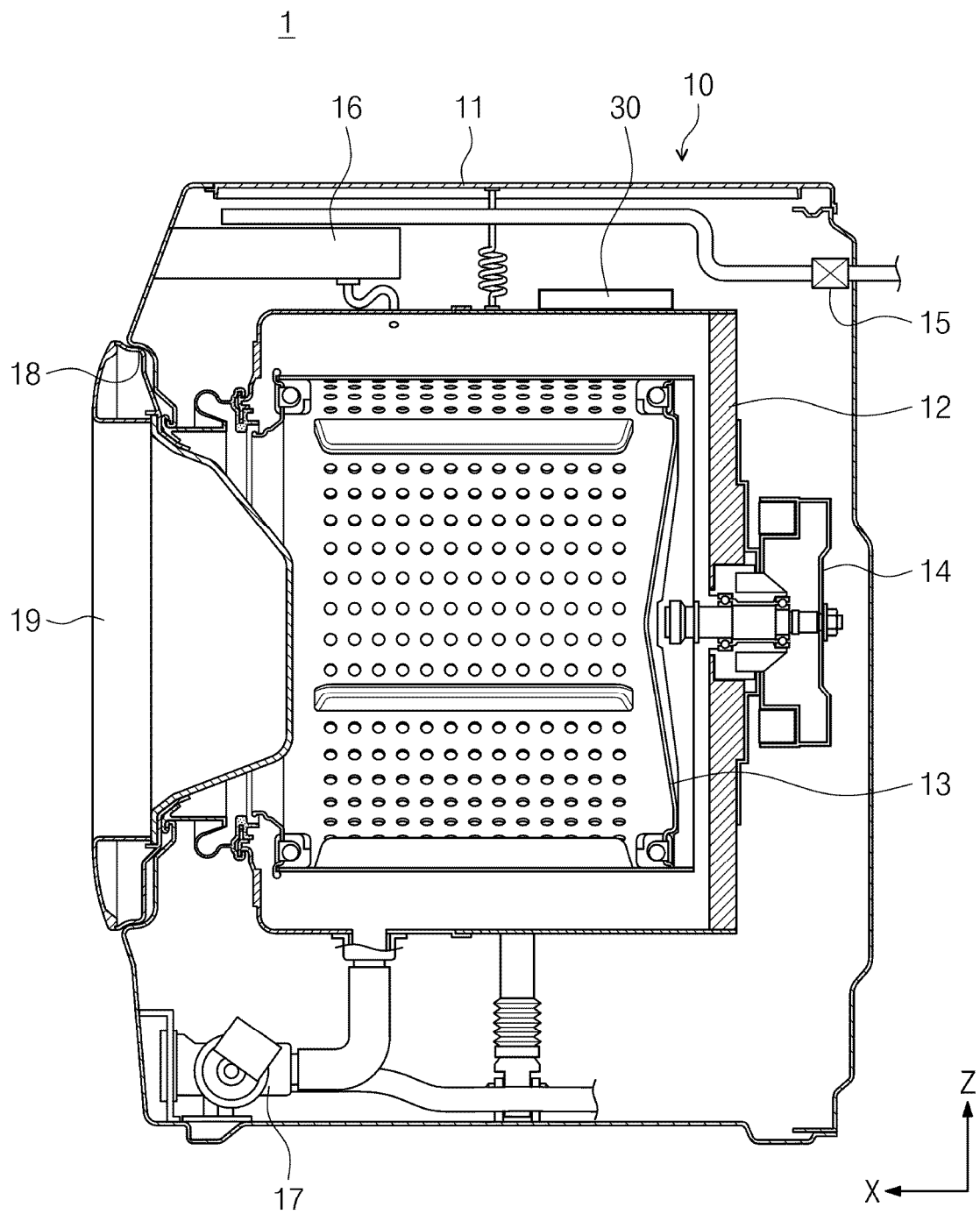


FIG. 3

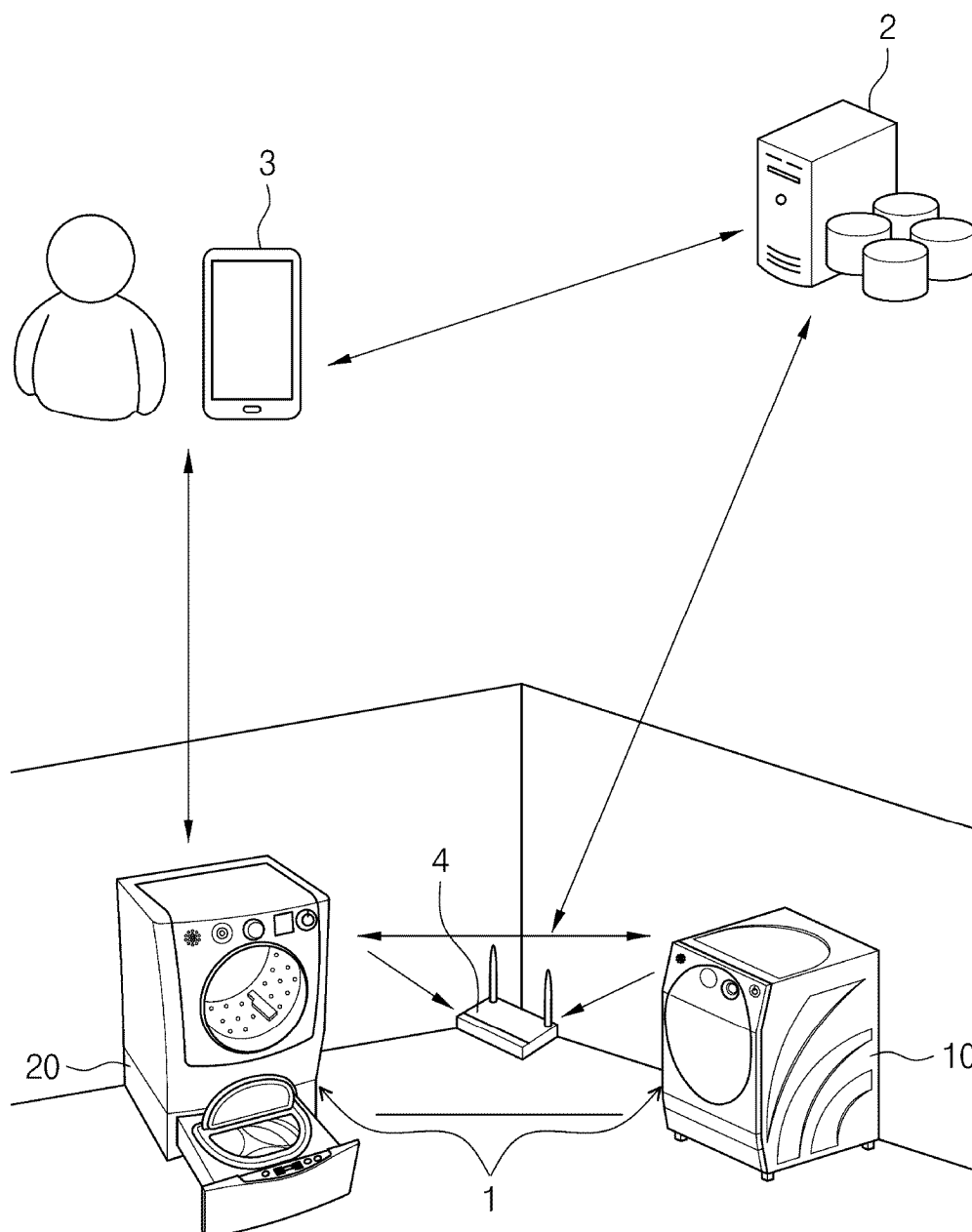


FIG. 4

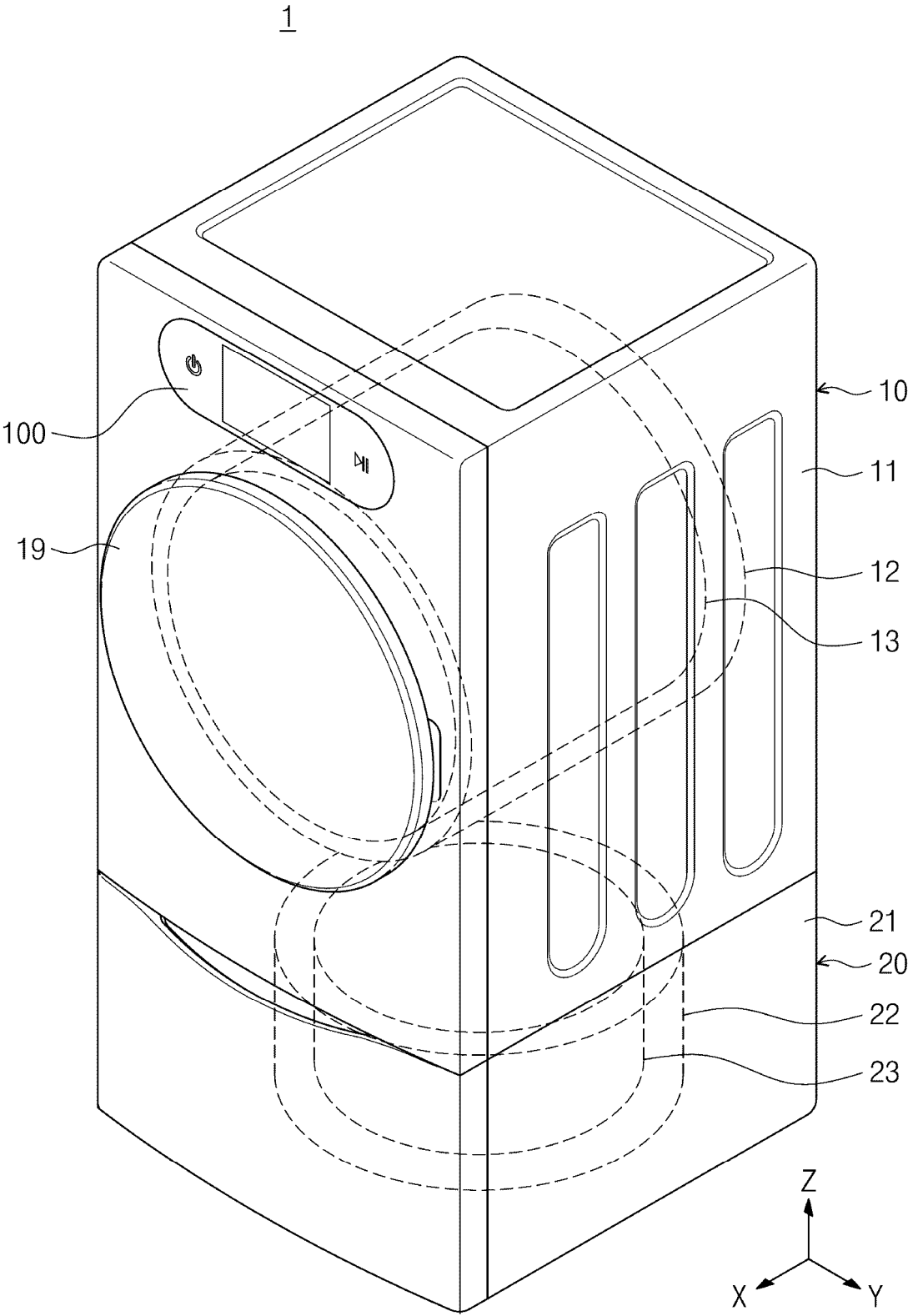


FIG. 5

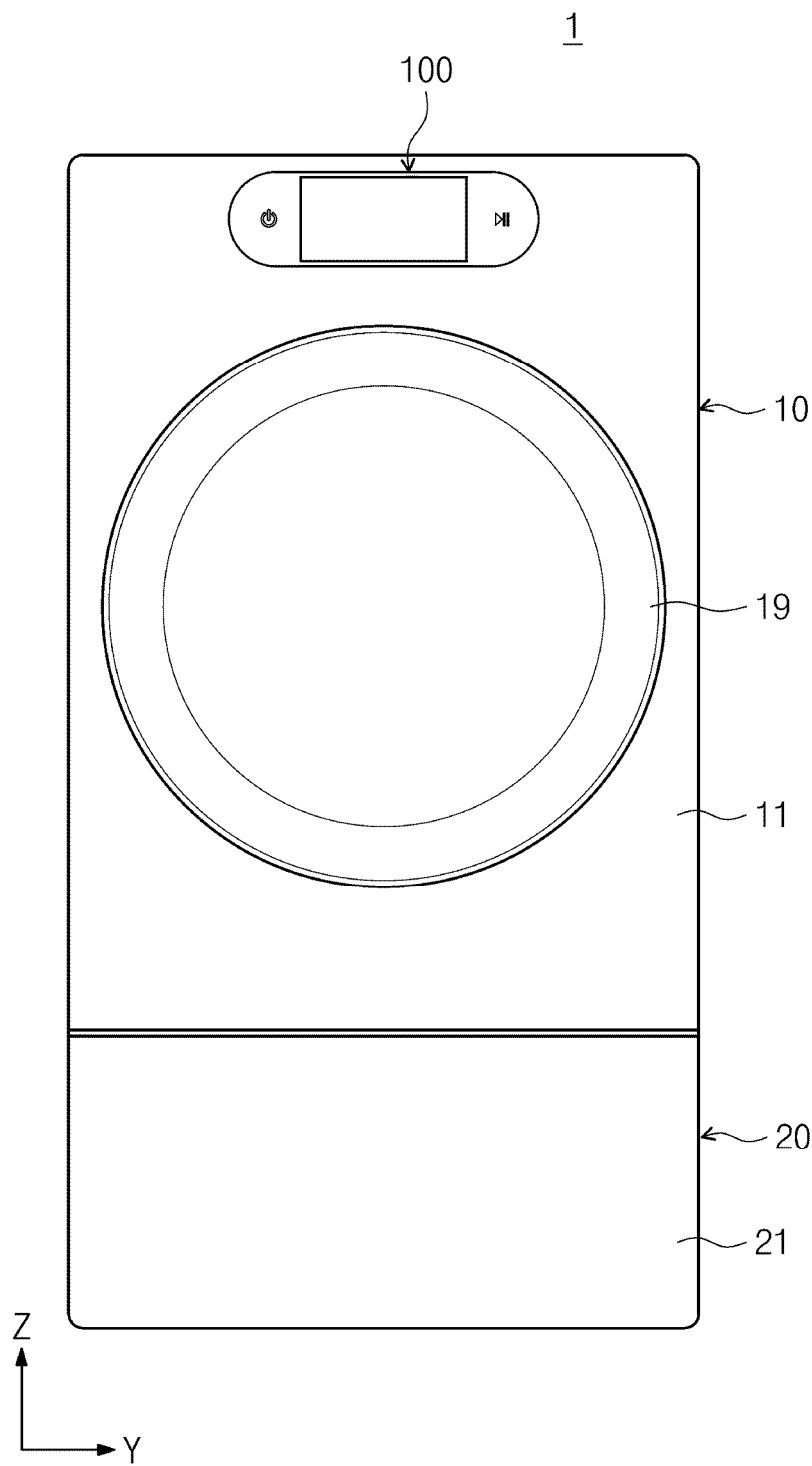


FIG. 6

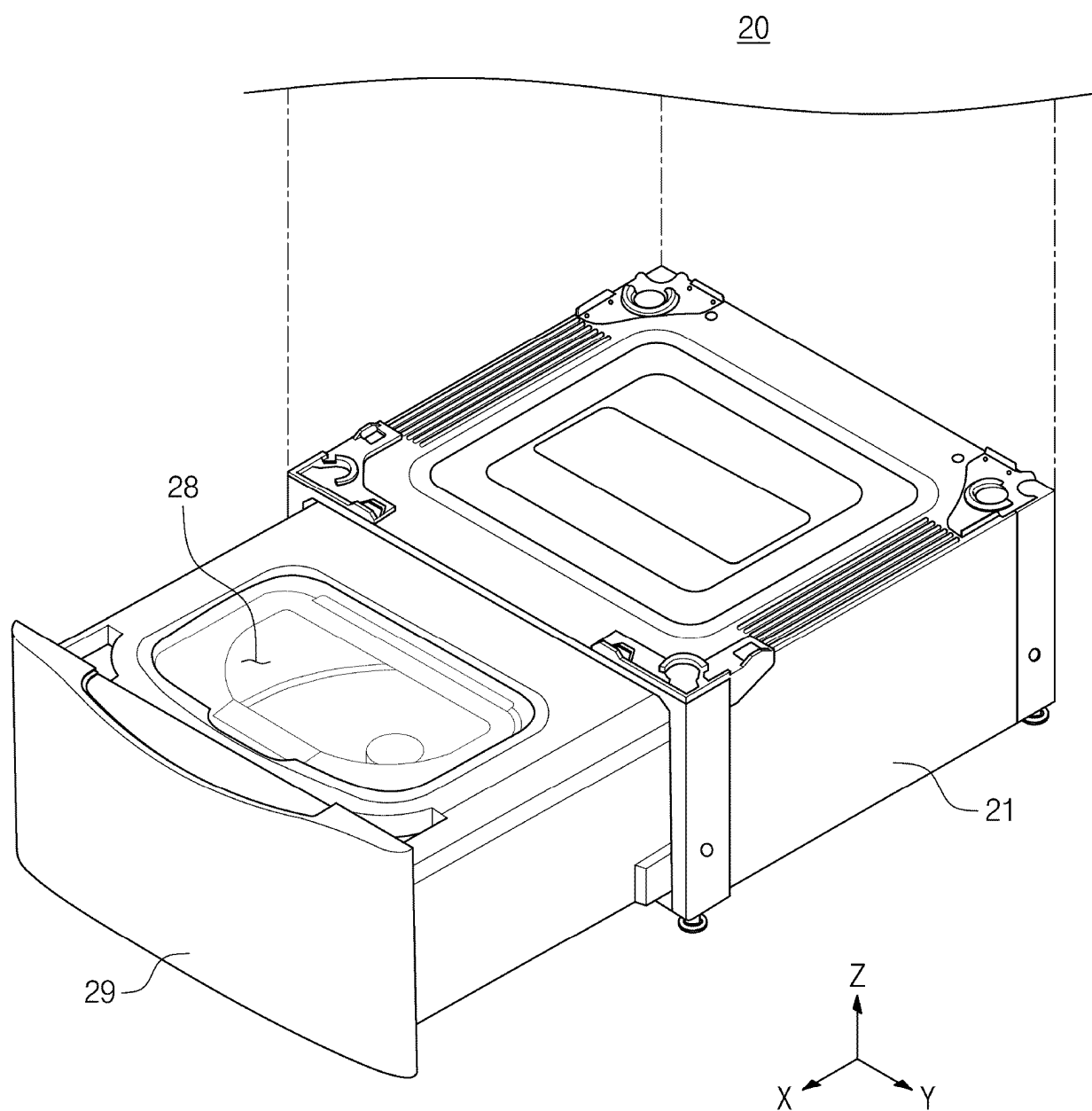


FIG. 7

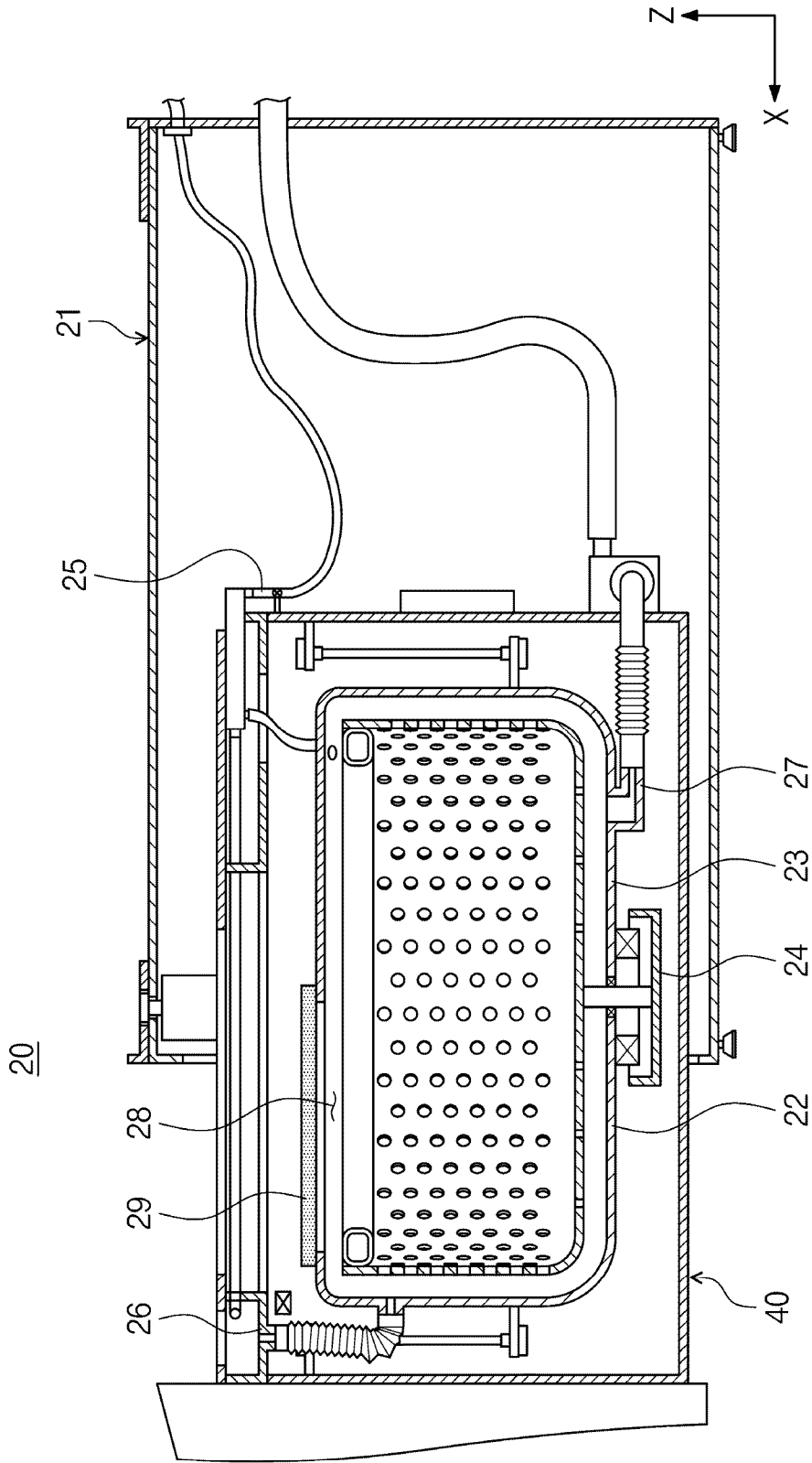


FIG. 8

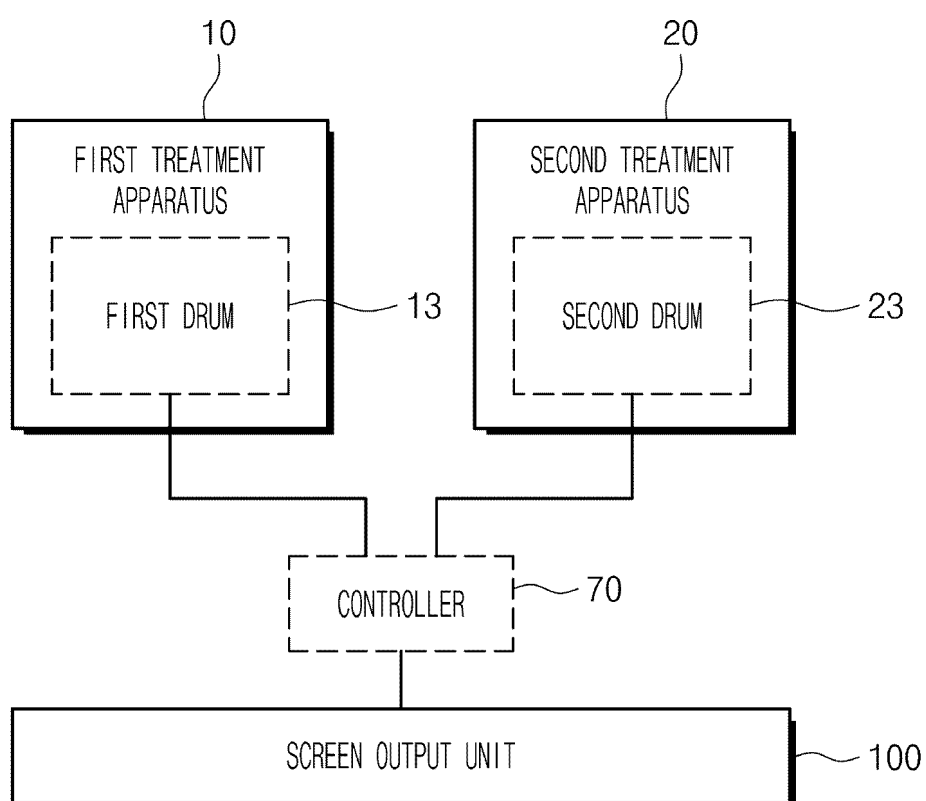


FIG. 9

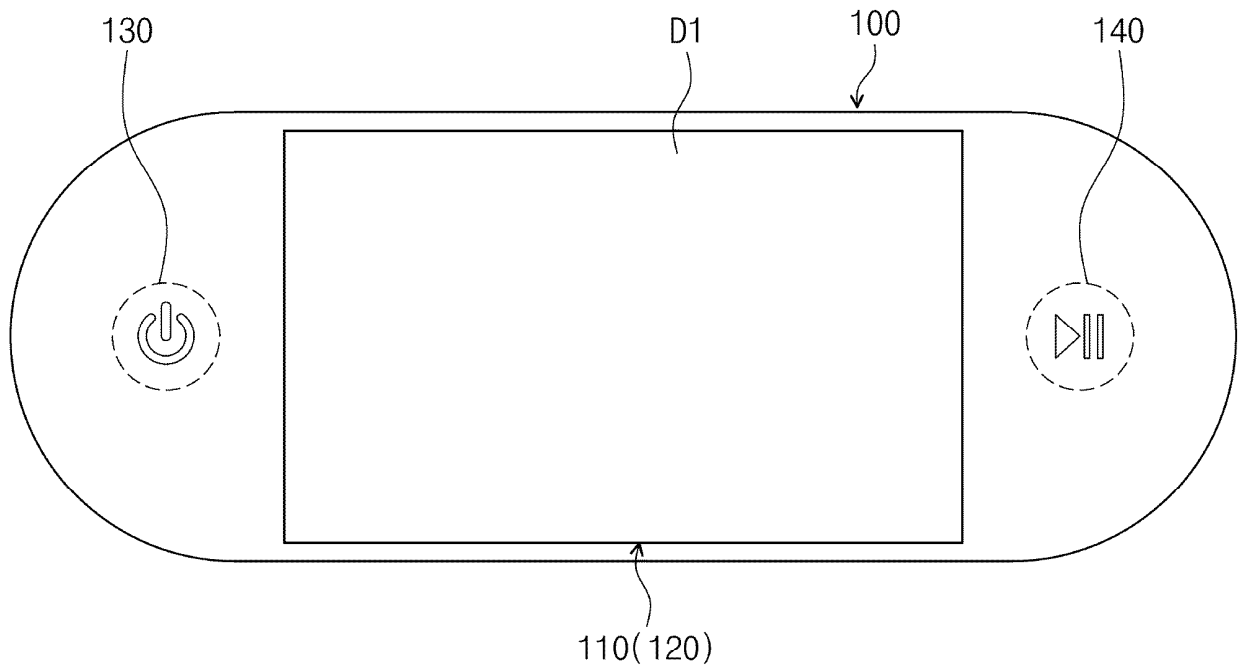


FIG. 10

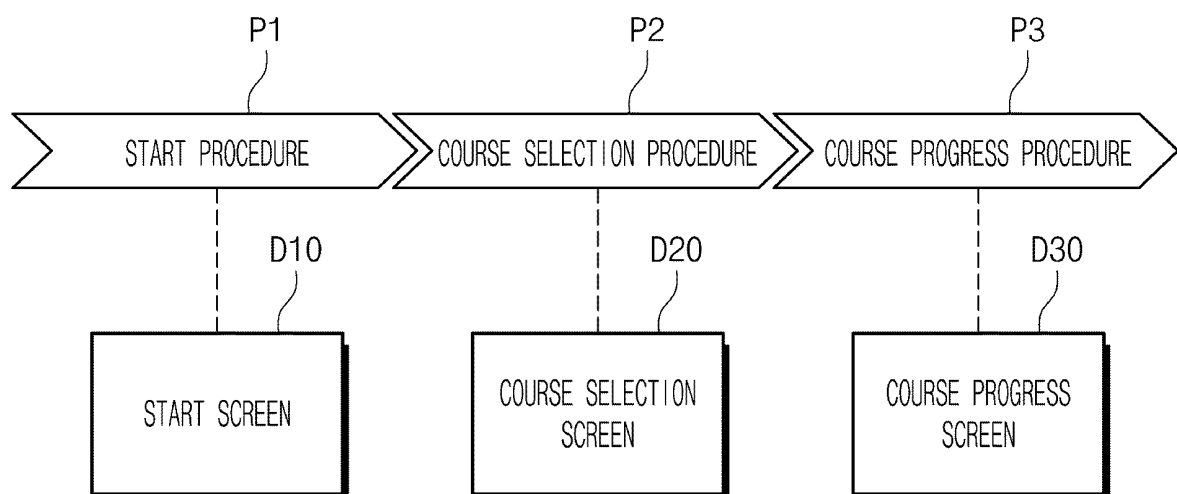


FIG. 11

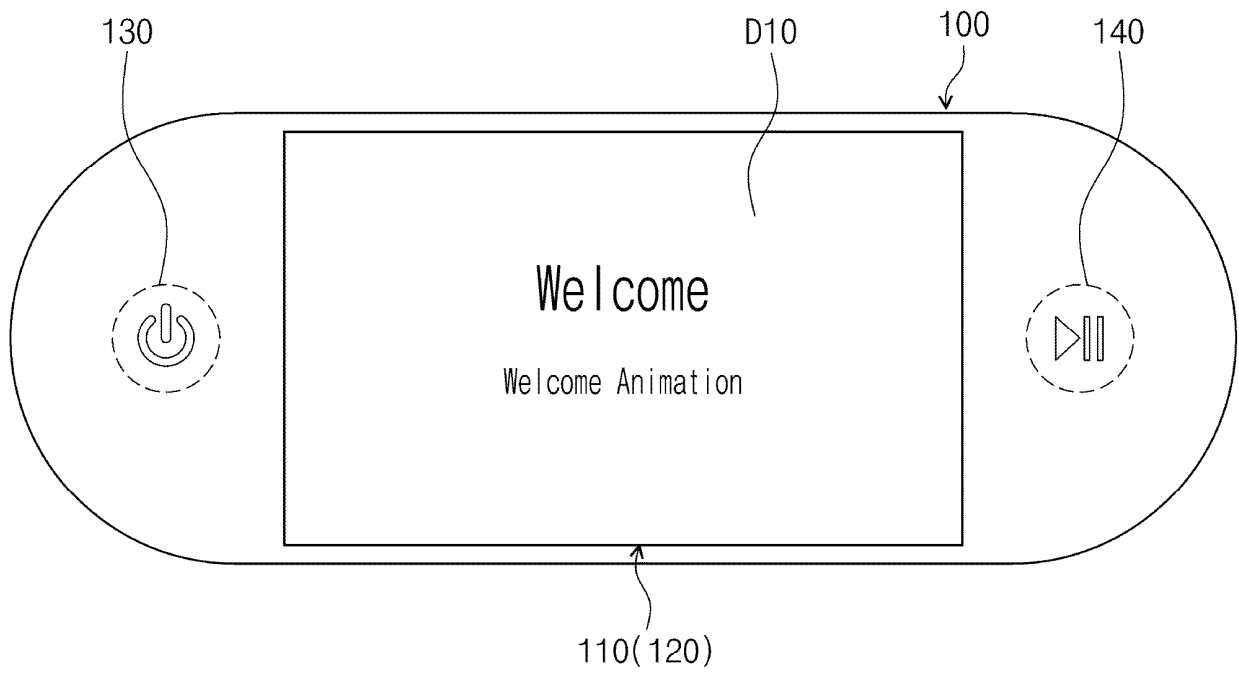


FIG. 12

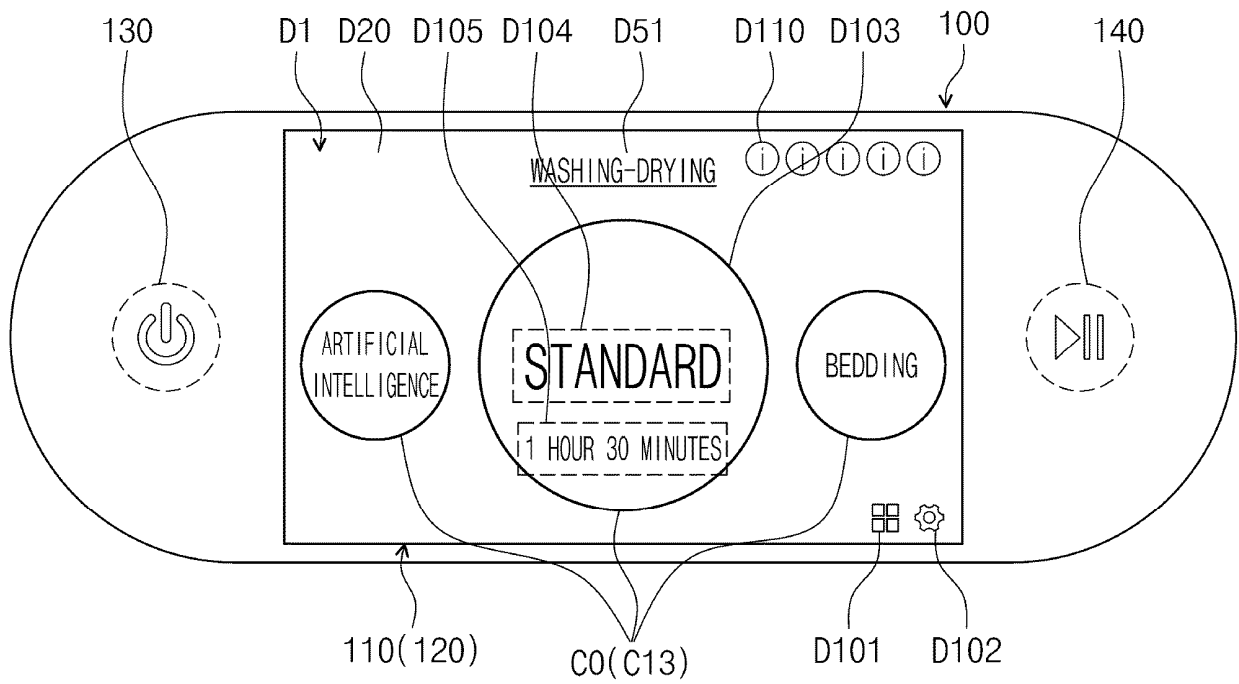


FIG. 13

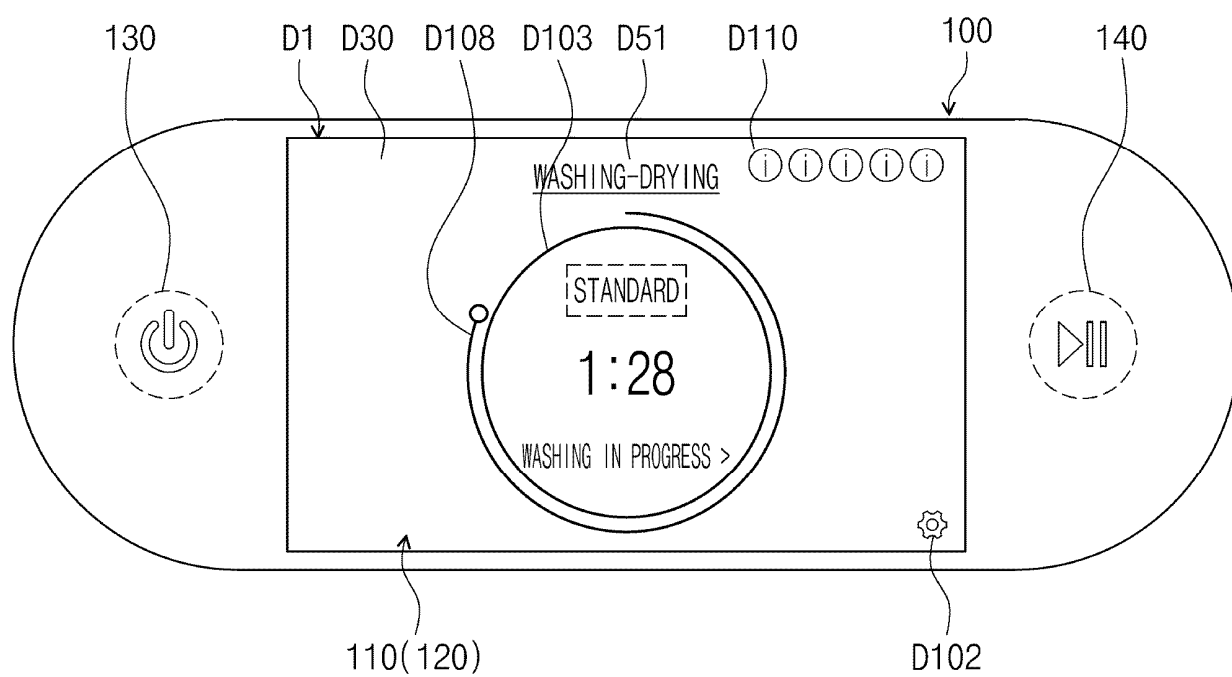


FIG. 14

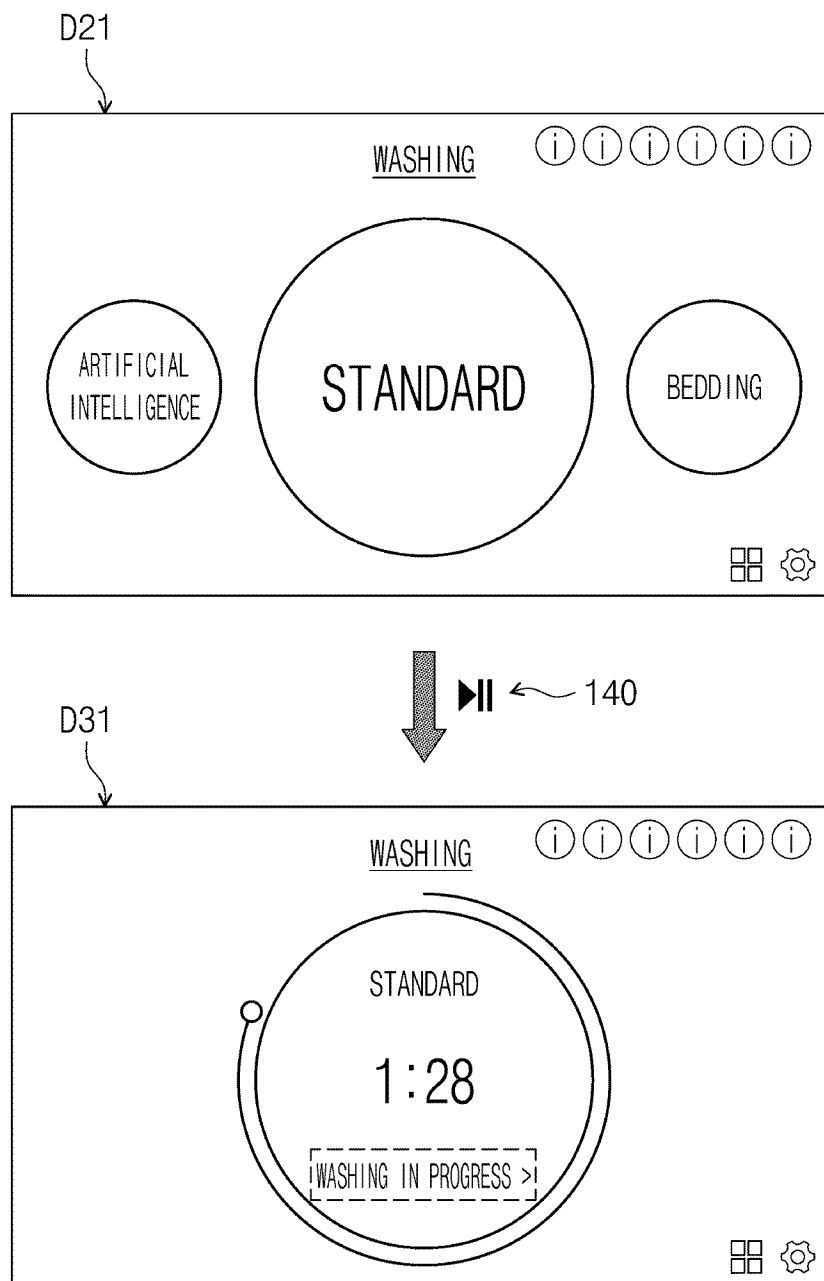


FIG. 15

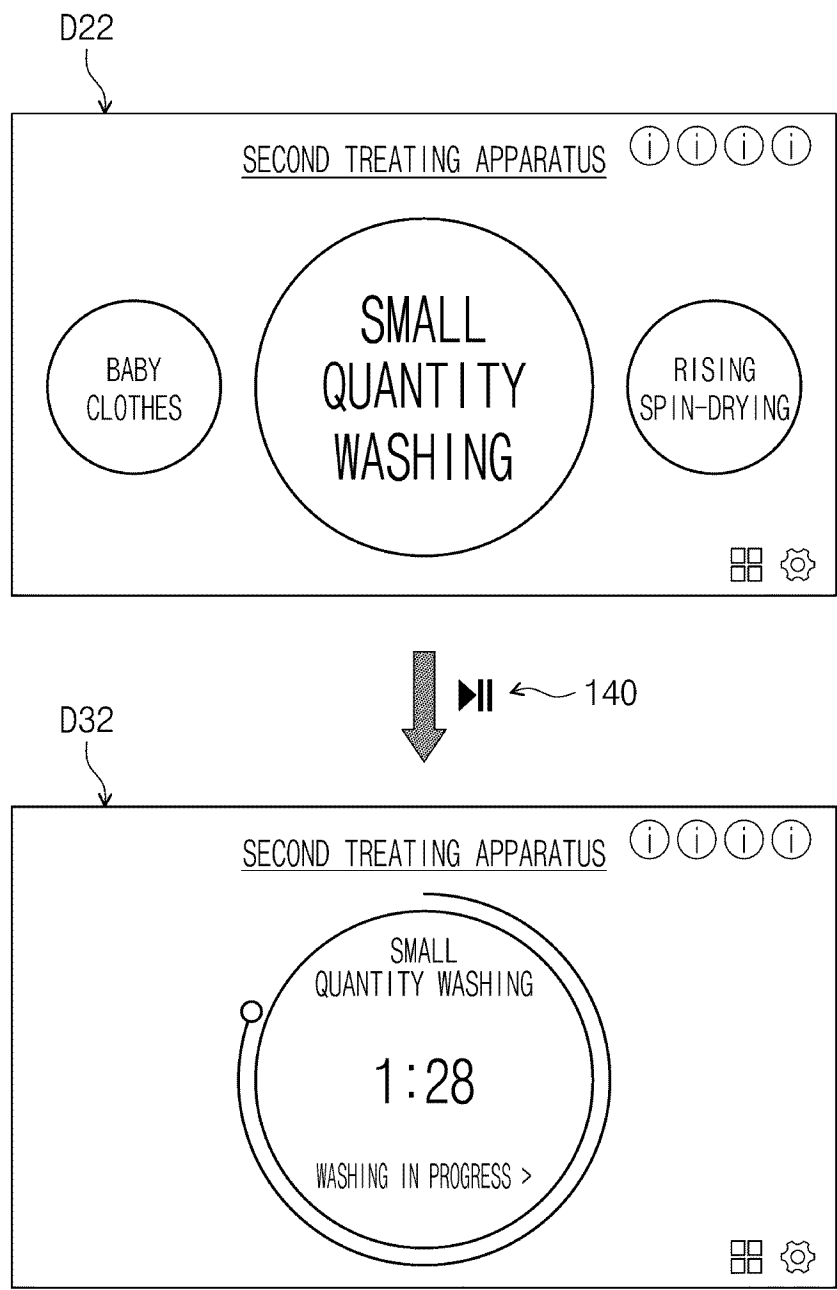


FIG. 16

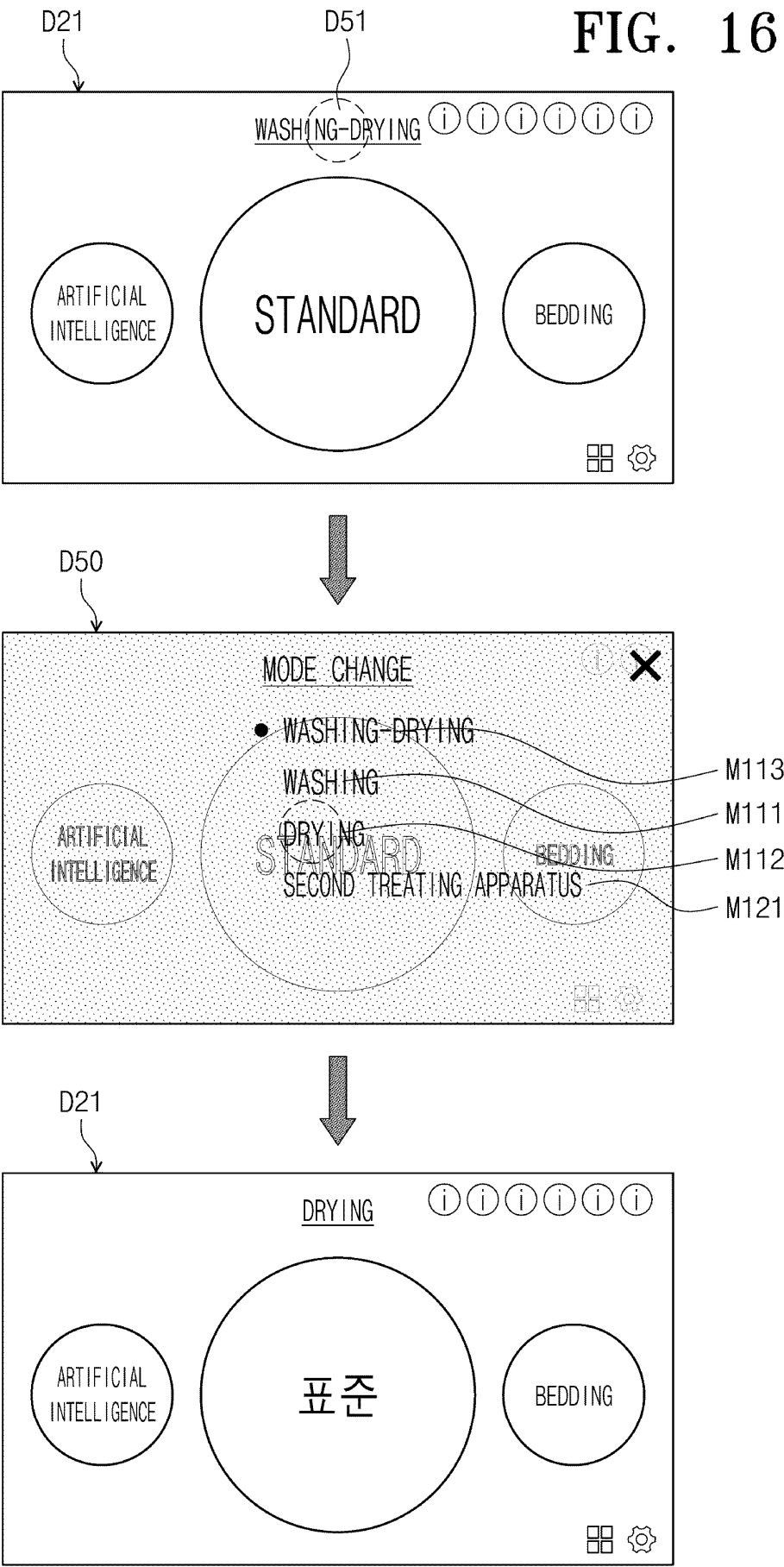


FIG. 17

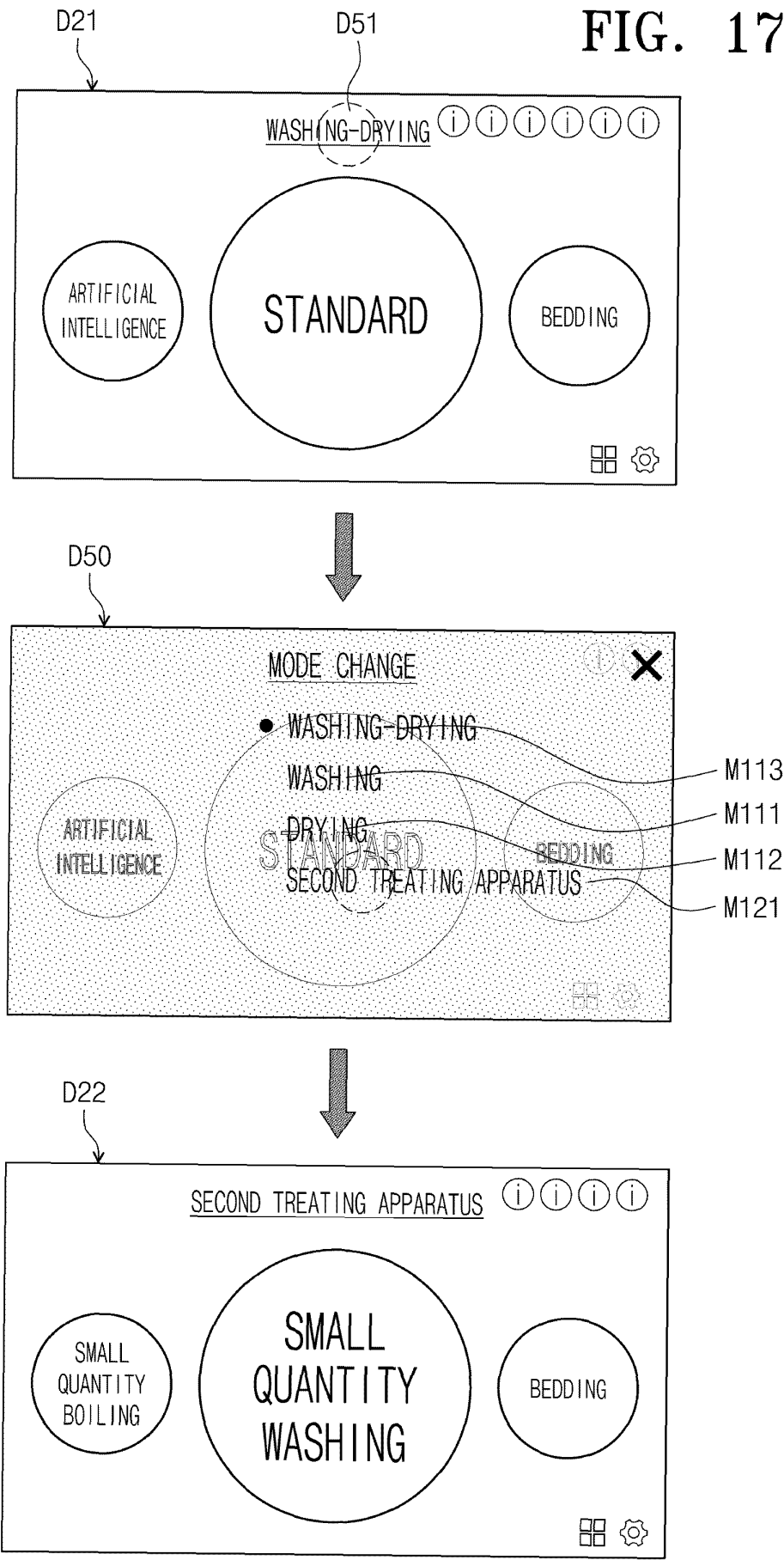


FIG. 18

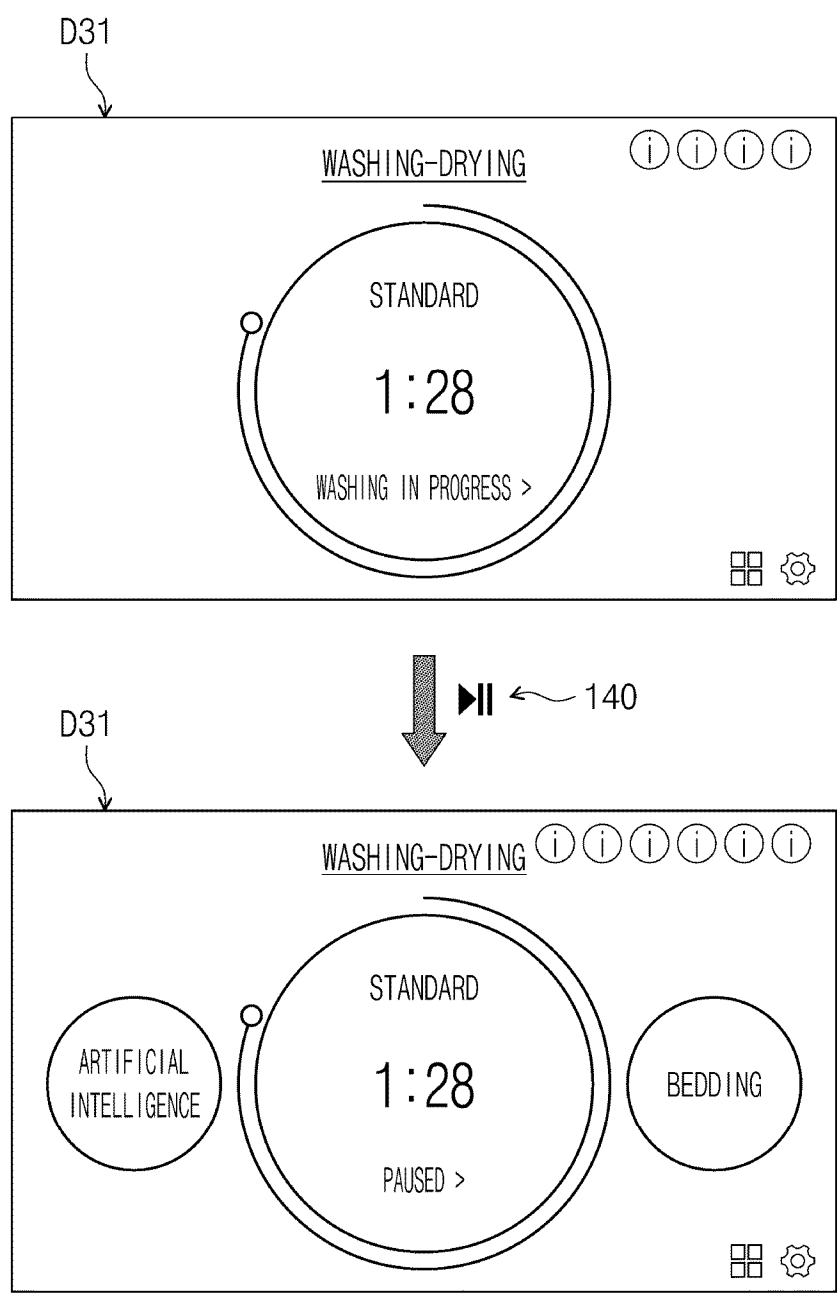


FIG. 19

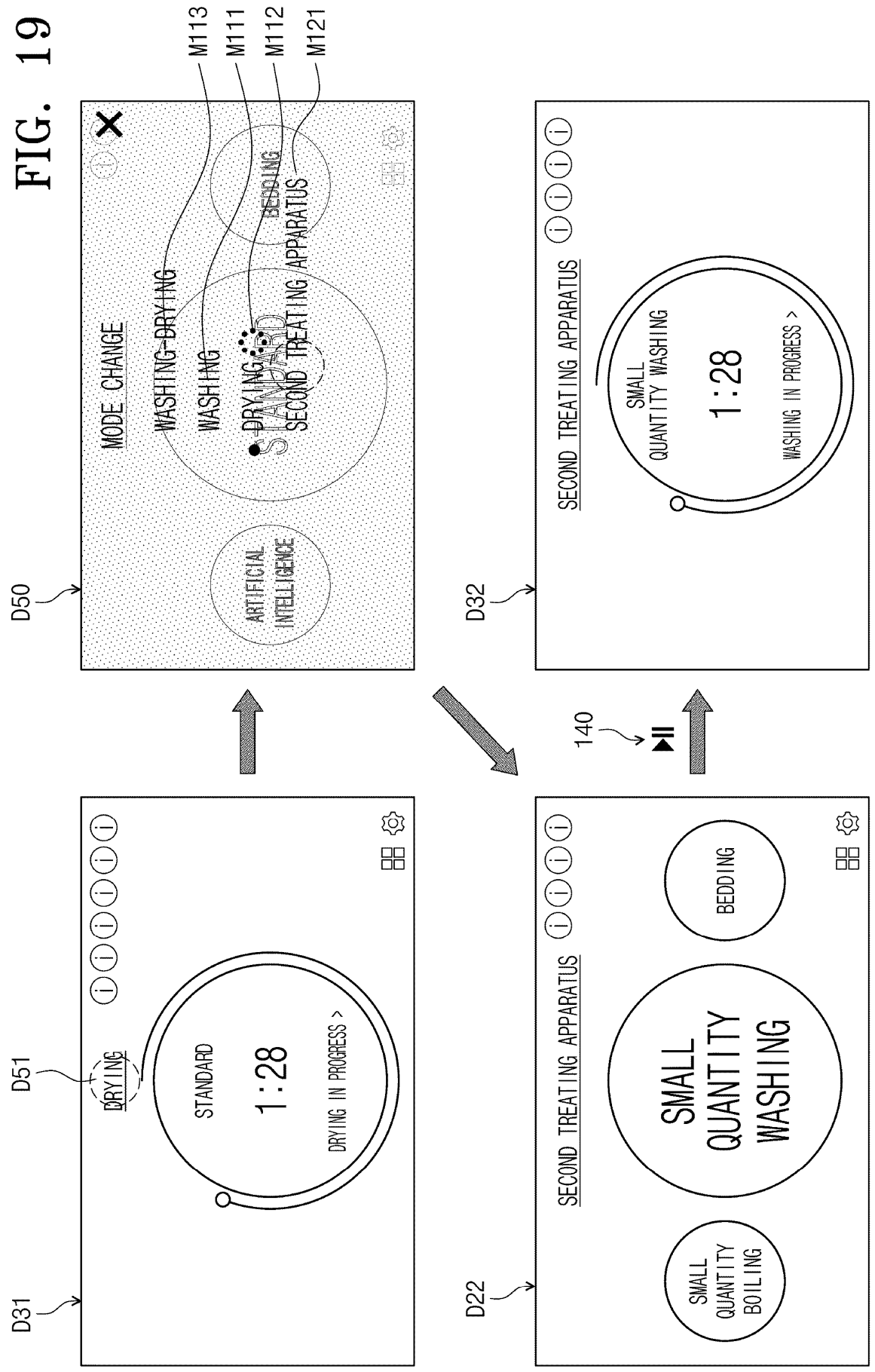


FIG. 20

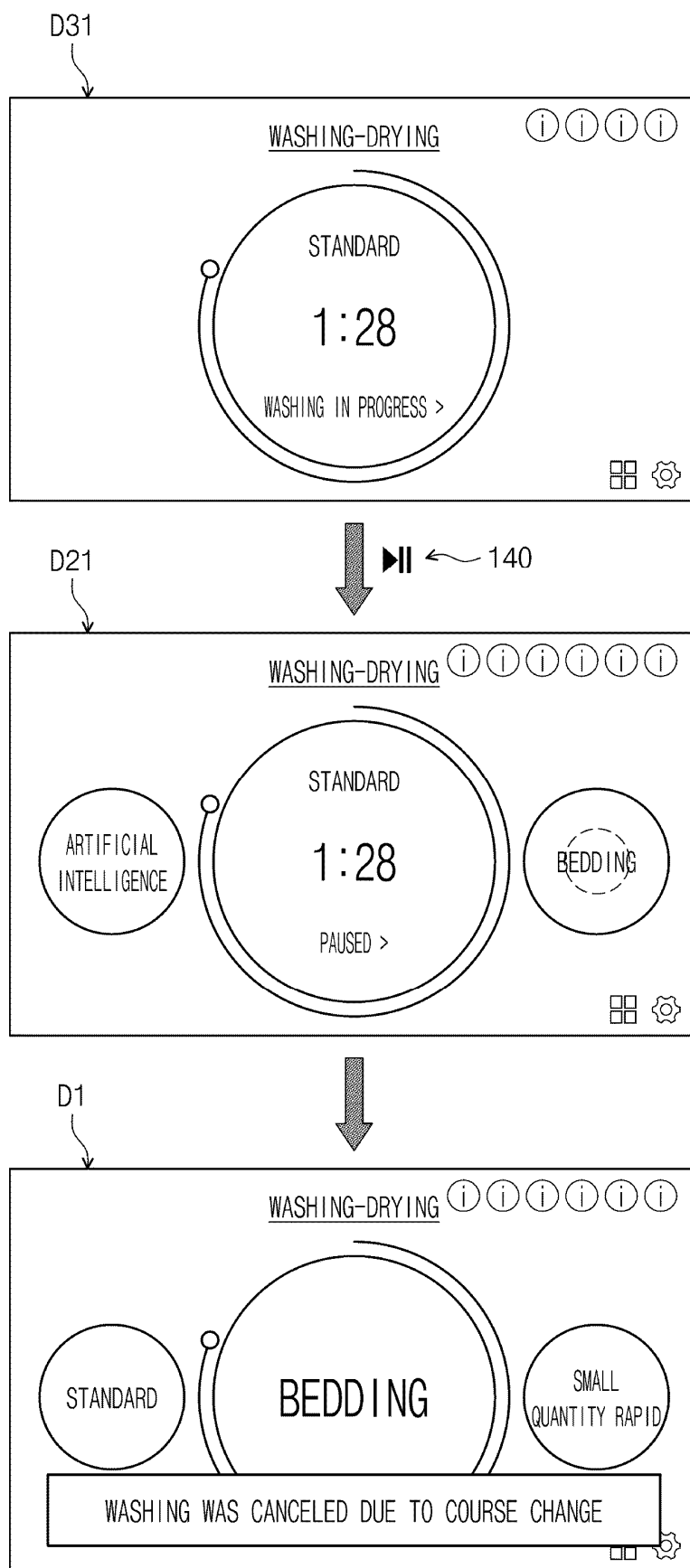


FIG. 21

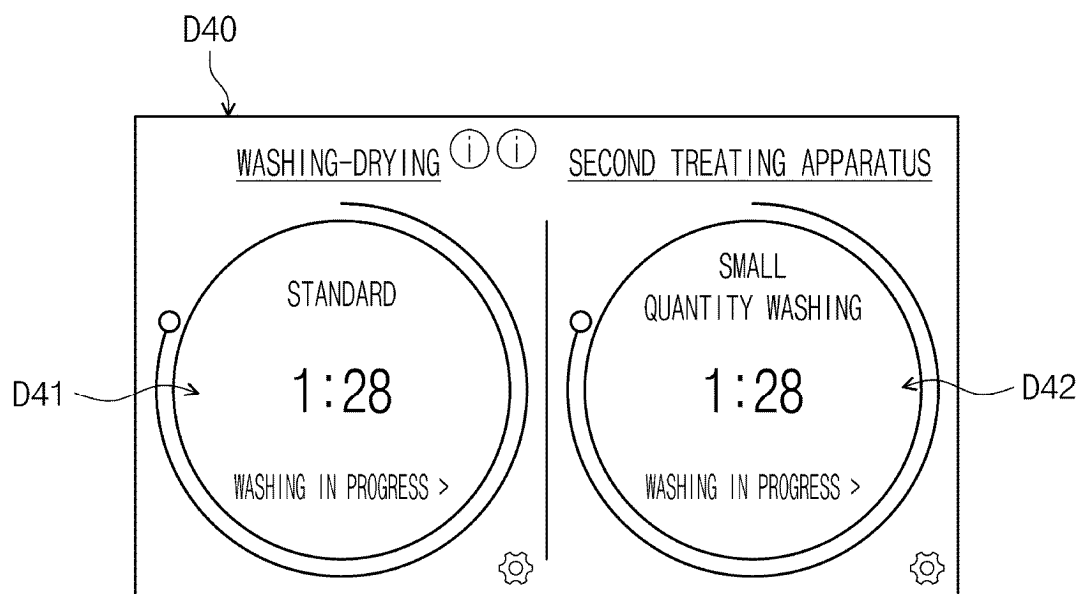


FIG. 22

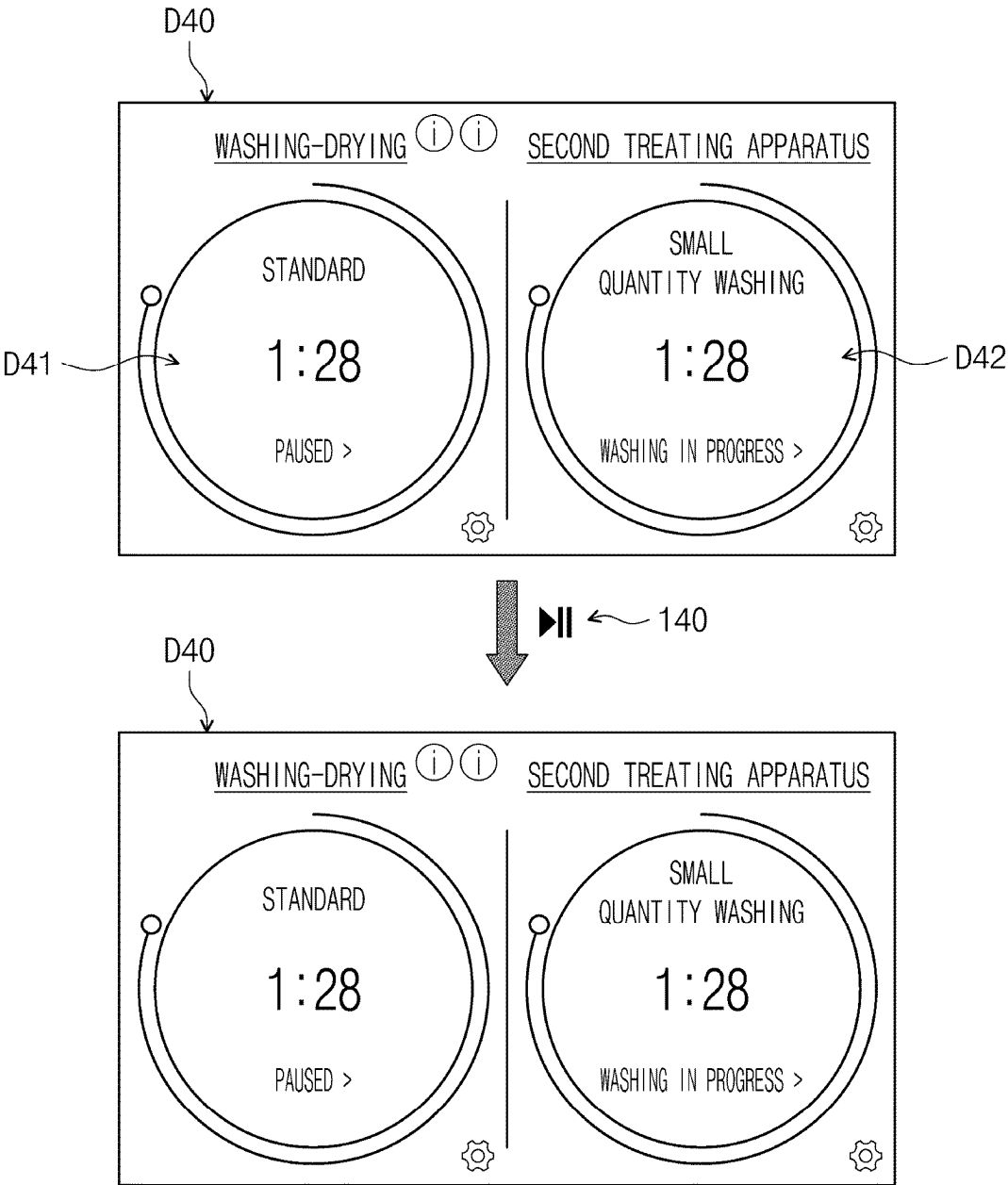


FIG. 23

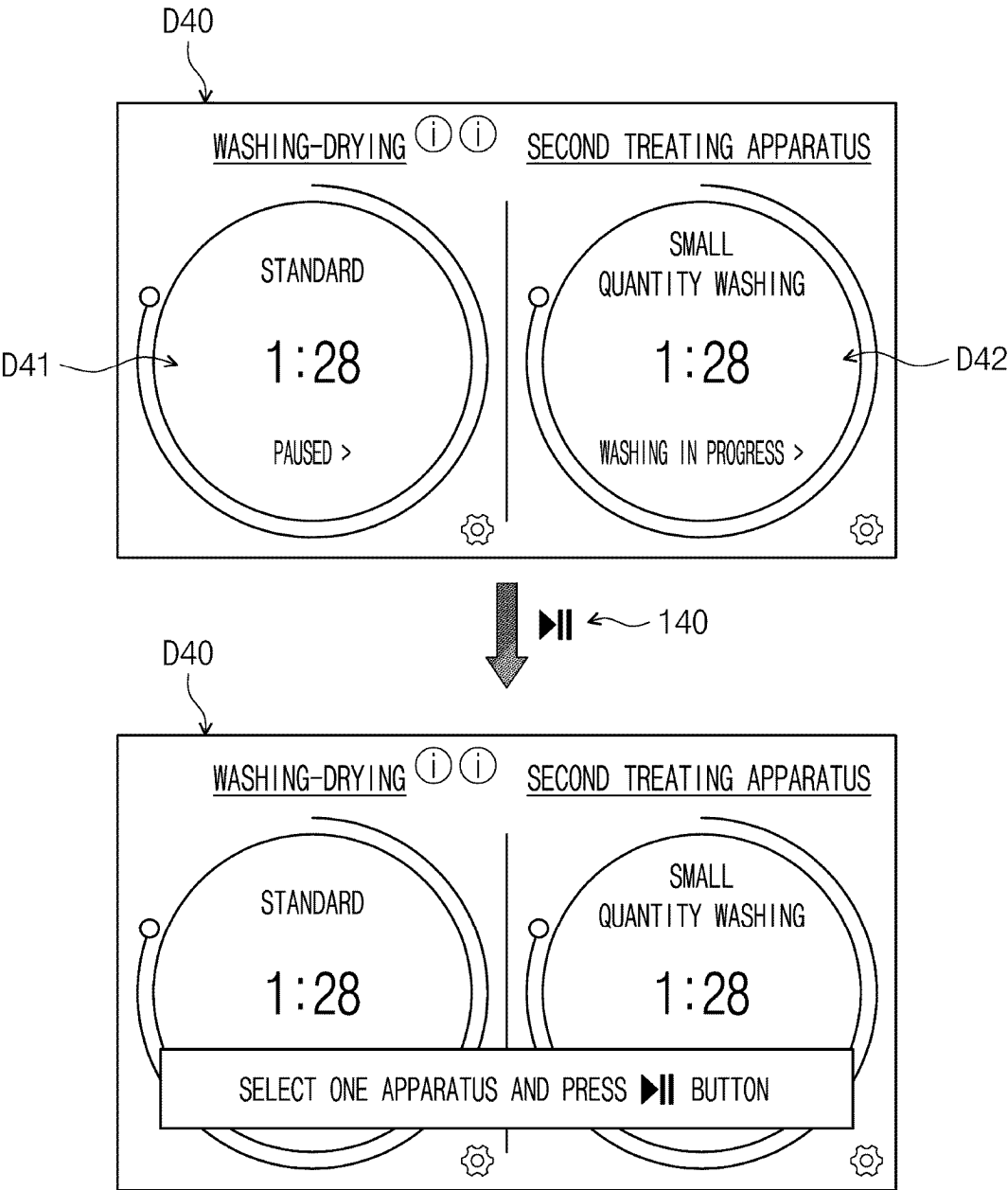


FIG. 24

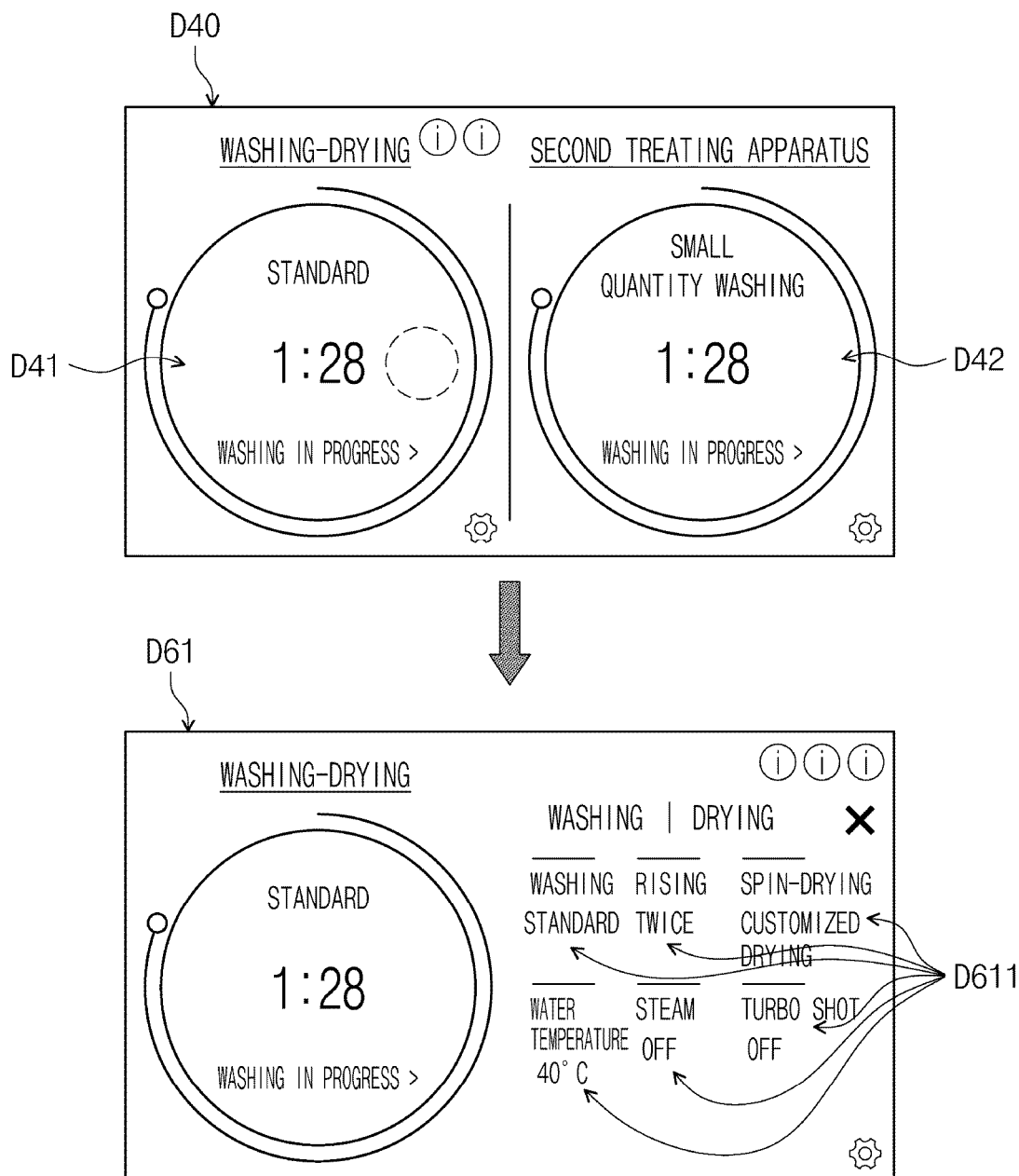


FIG. 25

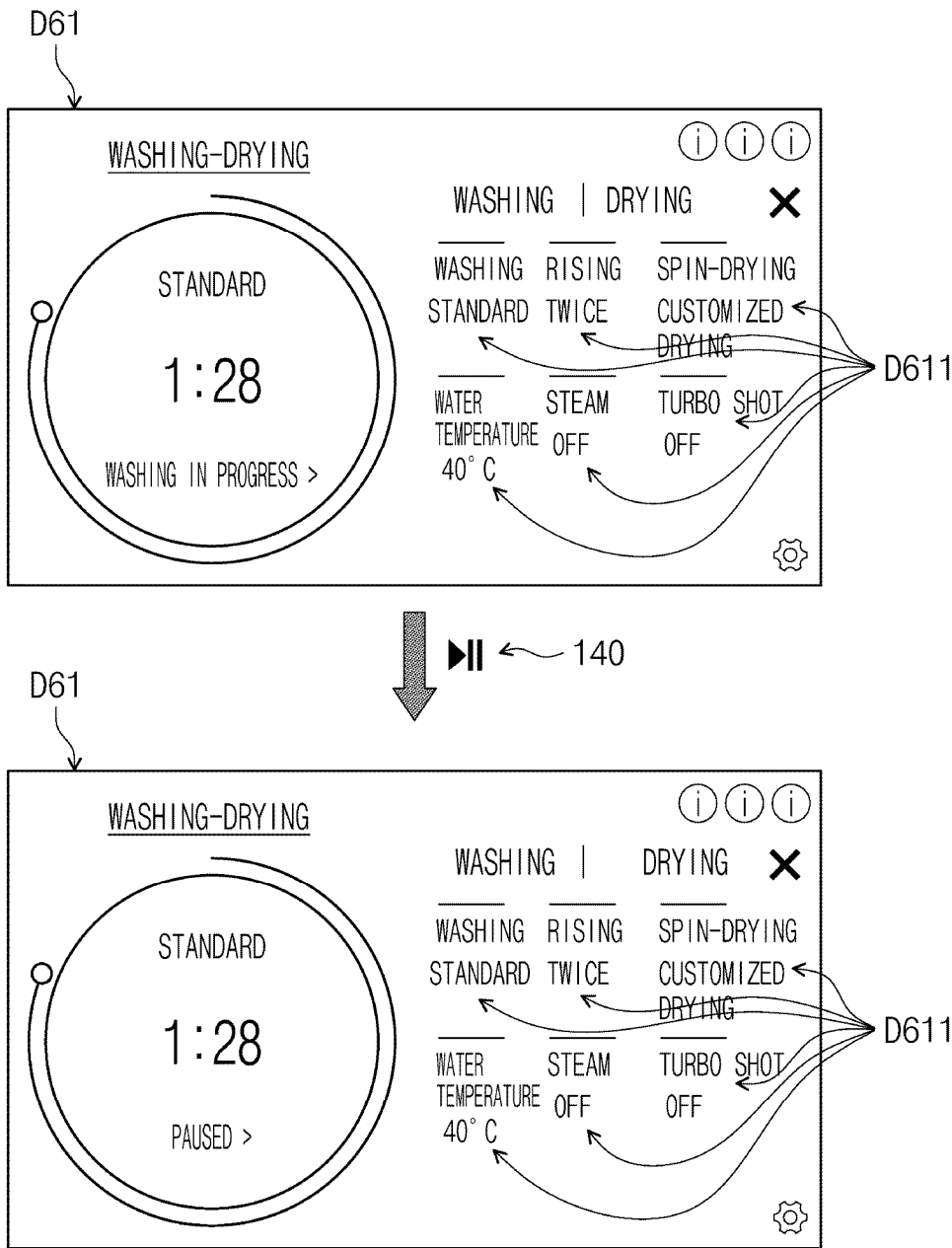


FIG. 26

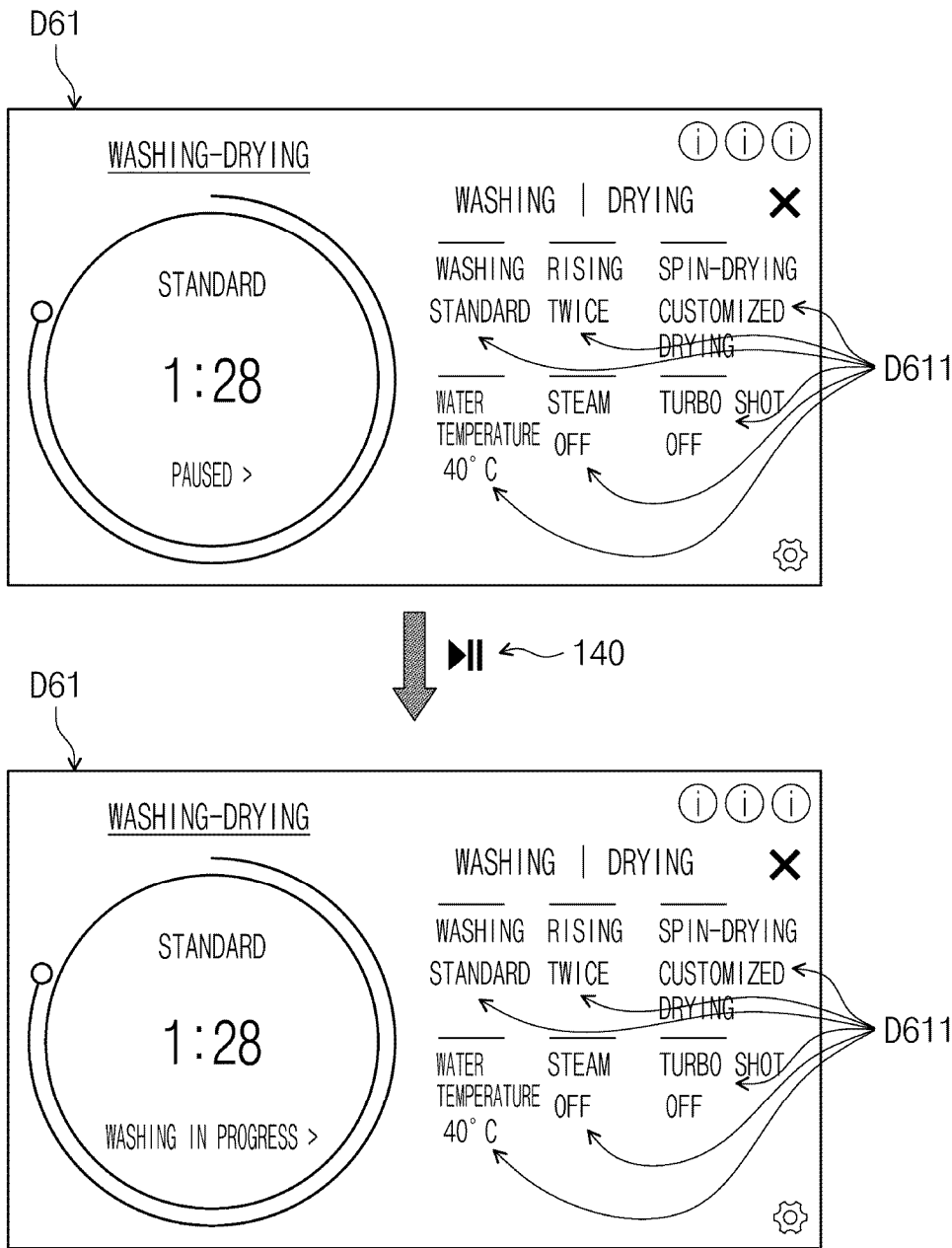
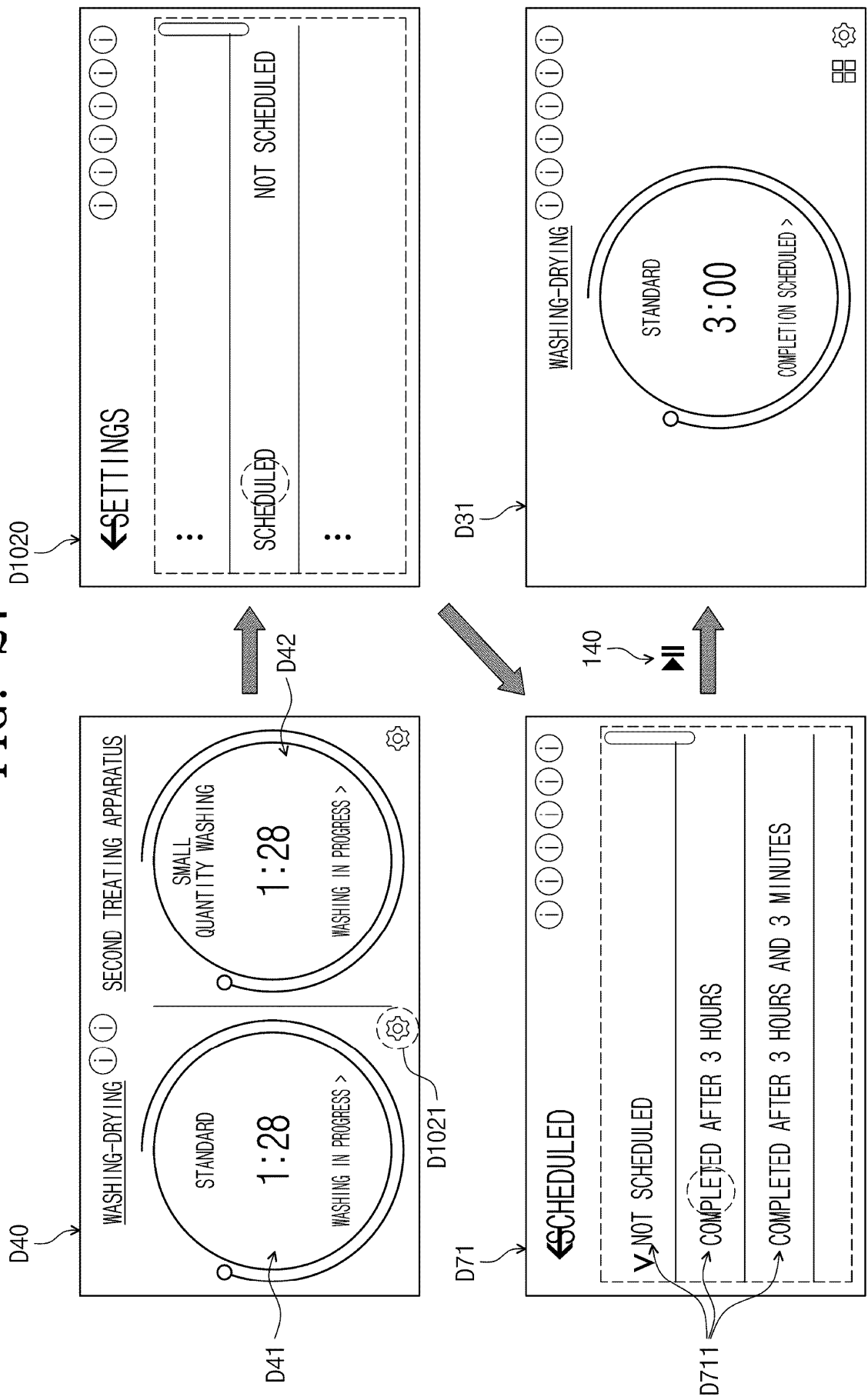


FIG. 27



INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2024/009470

A. CLASSIFICATION OF SUBJECT MATTER

D06F 34/34(2020.01)i; D06F 29/00(2006.01)i; D06F 37/04(2006.01)i; D06F 37/12(2006.01)i; D06F 34/30(2020.01)i;
D06F 34/32(2020.01)i; D06F 105/58(2020.01)i; D06F 103/68(2020.01)i; D06F 105/50(2020.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

D06F 34/34(2020.01); D06F 101/20(2020.01); D06F 33/02(2006.01); D06F 34/05(2020.01); D06F 34/20(2020.01);
F26B 19/00(2006.01); F26B 25/06(2006.01)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models: IPC as above

Japanese utility models and applications for utility models: IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS (KIPO internal) & keywords: 화면(display), 버튼(button), 코스(course), 의류(clothes), 정지(stop)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KR 10-2022-0110681 A (SAMSUNG ELECTRONICS CO., LTD.) 09 August 2022 (2022-08-09) See paragraphs [0016]-[0176]; and figures 1-2.	15
Y		1-14
Y	KR 10-2021-0109992 A (SAMSUNG ELECTRONICS CO., LTD.) 07 September 2021 (2021-09-07) See paragraphs [0193]-[0495].	1-14
Y	KR 10-2023-0001308 A (LG ELECTRONICS INC.) 04 January 2023 (2023-01-04) See paragraph [0026]; and figures 4-5.	13
A	KR 10-0347939 B1 (LG ELECTRONICS INC.) 09 August 2002 (2002-08-09) See claims 1-3; and figure 2.	1-15
A	US 2010-0011609 A1 (PARK, Seong Ho et al.) 21 January 2010 (2010-01-21) See paragraphs [0069]-[0206]; and figure 13.	1-15

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:

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“&” document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/KR2024/009470

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